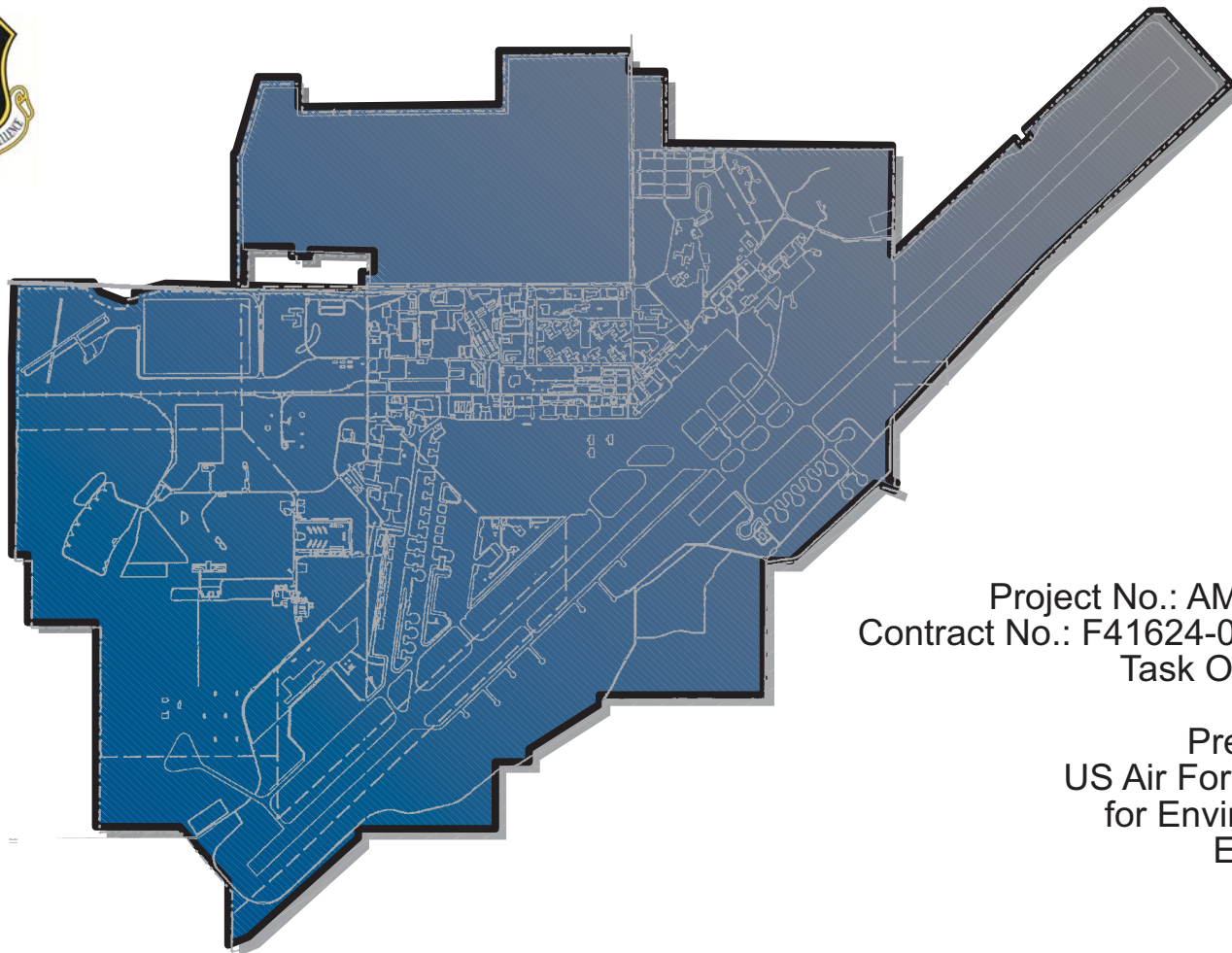




# Final Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities



Project No.: AMC204638  
Contract No.: F41624-03-D-8595  
Task Order 0202

Prepared for  
US Air Force Center  
for Environmental  
Excellence

July 2005



**CH2MHILL**

2485 Natomas Park Drive, Suite 600  
Sacramento, California 95833-2937

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)  
ENVIRONMENTAL ASSESSMENT FOR A GLOBAL REACH  
DEPLOYMENT CENTER AND ANCILLARY FACILITIES**

**TRAVIS AIR FORCE BASE, CALIFORNIA**

**Introduction**

This Finding of No Significant Impact (FONSI) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA, 40 Code of Federal Regulations (CFR) Parts 1500-1508; and Environmental Impact Analysis Process, 32 CFR 989. The decision in this FONSI is based on information contained in the *Environmental Assessment (EA) for a Global Reach Deployment Center and Ancillary Facilities (Center) at Travis Air Force Base (AFB or Base)*. The purposes of the EA are to determine the extent of environmental impact that might result from proposed improvements at Travis AFB and evaluate whether these impacts, if any, would be significant.

The purpose of the Proposed Action is to provide a centralized, environmentally safe area for operations of the Air Mobility Operations Group (AMOG) and to prepare the Base for reorganization of AMOG into a Contingency Response Wing (CRW), which would add more personnel permanently to Travis AFB. AMOG's mission is to test equipment, load equipment and personnel onto aircraft within a 12-hour response time. Currently, AMOG is using 11 buildings that are distributed across the Base, some of which are not adequate for the purposes for which they are used. Centralizing operations in adequate facilities would improve response efficiency.

**Description of Proposed Action and Alternatives**

The alternatives that have been analyzed to accomplish the action include the No Action Alternative and building the Center. To be considered a reasonable alternative, the chosen alternative should be close to the flightline; meet or exceed state environmental requirements for building and parking lot construction; comply with U.S. Air Force and Department of Defense planning and design manuals, design standards, and safety requirements for airfield operations; and centralize AMOG facilities for safe and efficient deployment operations.

Reorganization of AMOG into CRW would also occur under the No Action Alternative. Under each alternative, additional personnel for Theater Deployable Communications and a Reserve Associate Unit would permanently be added to Travis AFB. Although the additional personnel and their warehousing and administrative missions would be housed in existing buildings under the No Action Alternative, new facilities would be constructed to accommodate Theater Deployable Communications and the Reserve Associate Unit under the Proposed Action.

The U.S. Air Force proposes the multi-phased construction of a Center with a footprint of almost 670,000 square feet (ft<sup>2</sup>). The footprint would include 146,000 ft<sup>2</sup> for buildings and approximately 522,000 ft<sup>2</sup> of paved areas for sidewalks, roads, and parking. Construction would require landscape clearing, site preparation, installation of utility systems, and installation of support infrastructure and facilities.

Both alternatives considered for the action are analyzed in the EA. The No Action Alternative was carried forward for analysis in accordance with NEPA 40 CFR §1502.14(d)

The Proposed Action is the only alternative that meets the selection criteria, in addition to having no significant adverse effect on the natural or human environment.

## Decision

Based on the review of the EA, the Air Force has decided to proceed with the construction of the Center. The potential impacts to the human and natural environment were evaluated relative to the No Action Alternative. For each environmental resource or issue, anticipated direct and indirect effects were assessed, considering both short-term and long-term project effects.

Only minor, short-term, insignificant impacts would be expected from implementation of the Proposed Action listed in the EA. During construction and operation, the Proposed Action would result in less than significant impacts or no effects to air quality, noise, hazardous materials, hazardous waste, stored fuels, water resources, biological resources, land use, cultural resources, transportation systems, airspace/airfield operations, safety and occupational health during construction, environmental management, and environmental justice. The Proposed Action would provide socioeconomic benefits through the generation of construction jobs and as a result of the increased purchasing power represented by additional permanent personnel. Furthermore, operation of AMOG/CRW in an adequate, centralized facility would provide beneficial impacts to human health and safety by reducing the potential for accidents.

Overall, the analysis for this EA indicates that the construction of the Center, as described under the Proposed Action, would not result in or contribute to significant negative cumulative or indirect impacts to the resources in the region.

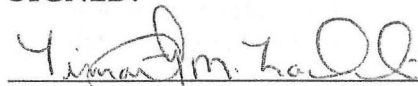
## Conclusion

In accordance with the CEQ regulations implementing NEPA and the Air Force Environmental Impact Analysis Process, the Air Force concludes that the Proposed Action will have no significant impact on the quality of the human environment and that preparation of an environmental impact statement is not warranted.

A copy of the EA was made available to the public at the Fairfield-Suisun Community Library, the Vacaville Public Library, and the Mitchell Memorial Library at Travis AFB from 3-17 Jun 05. No comments were received from the public.

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SIGNED:



DATE: 13 Jul 05

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# Architect-Engineering (A-E) Services



## **Final Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities**

**CDRL A001B, A001D, and A001E  
Paragraphs 9.1 and 9.4.2**

**Prepared for  
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**Prepared by**



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# Preface

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CH2M HILL is performing Architect-Engineering (A-E) Services to support Natural Resource Liability Asset Management (NRLAM) Assessment, Environmental Assessments, and Various Conservation Projects at Travis Air Force Base, California. This work is being conducted under the Air Force Center for Environmental Excellence Contract No. F41624-03-D-8595, Task Order No. 0202 (Project No. AMC204638 and Project No. AMC208892).

Key CH2M HILL project personnel for Final *Environmental Assessment and Finding of No Significant Impact (FONSI) for a Global Reach Deployment Center and Ancillary Facilities* at Travis Air Force Base completed under this contract are:

- Tony Jaegel – Regional Project Team Lead
- Karin Lilienbecker – Task Manager and Senior Review
- Christine Roberts – Senior Review
- Ed McCarthy – Project Team Member
- Fawn Elhadidi – Document Manager
- Kim Basial – Technical Editor

For quality control purposes, CH2M HILL staff has reviewed this Environmental Assessment and FONSI. The senior reviewer listed below, by virtue of her signature, has concluded that this document meets or exceeds the deliverable requirements set forth in the Statement of Work.



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Karin Lilienbecker

July 6, 2005

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Date

# Executive Summary

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## Introduction

The U.S. Air Force (Air Force) Air Mobility Command proposes the construction of a Global Reach Deployment Center and ancillary facilities (Center) for the 615<sup>th</sup> Air Mobility Operations Group (AMOG) at Travis Air Force Base (AFB). The purpose of this Environmental Assessment (EA) is to determine whether the Proposed Action would have a significant adverse effect on the quality of the environment. In accordance with Air Force Regulations (Title 32 of the Code of Federal Regulations [CFR], Part 989, Environmental Impact Analysis Process), an EA is the appropriate documentation required. A Categorical Exclusion is not applicable because the Proposed Action does not meet the criteria for preparing such a document. In addition, an Environmental Impact Statement is not required because impacts potentially resulting from the Proposed Action would not be significant.

## Purpose and Need for the Action

The purpose of the Proposed Action is to provide an environmentally safe area to perform the full spectrum of Global Reach Laydown operations, including a centralized storage and deployment area for AMOG. Current operations are distributed across the Base and housed in facilities that are inadequate to implement AMOG's mission effectively. AMOG has reorganized into a Contingency Response Wing (CRW) and, although the future mission is similar, the organizational structure will be more complex and larger, requiring additional facilities. As a result of the reorganization, additional facilities to accommodate the increase in personnel associated with Theater Deployable Communications (TDC) and the Reserve Associate Unit (RAU) will be required. Construction of centralized AMOG facilities would reduce the potential for errors and accidents (e.g., accidental fuel spills). The Proposed Action would improve weapons security and mission readiness by reducing response time and prepare the Base for the reorganization from AMOG to CRW.

## Description of Proposed Alternatives

The alternatives analyzed in this EA are the No Action Alternative and the Proposed Action. To be considered a reasonable alternative for global reach storage and deployment at Travis AFB, the following should be accomplished in a cost-efficient and cost-effective manner, with minimal impact to human health and the environment:

- Be close to the flightline
- Meet or exceed state environmental requirements for building and parking lot construction
- Comply with Air Force and Department of Defense planning and design manuals, design standards, and safety requirements for airfield operations

- Centralize AMOG facilities for safe and efficient deployment operations
- Provide safe weapons storage
- Meet minimum Anti-Terrorism/Force Protection requirements
- Meet or exceed seismic requirements
- Provide adequate space (in excess of 600,000 square feet [ft<sup>2</sup>]) for indoor storage, administration, and maintenance to accommodate efficient handling and delivery of deployment operations

An alternative location south of Hangar Avenue near the Davis Grant Medical Center was considered but rejected because that location had environmental constraints and was too far from the flightline. The No Action Alternative is carried forward for consideration in accordance with 32 CFR 989.8(d).

### **Alternative 1 – No Action Alternative**

Under the No Action Alternative, the construction of the Center would not occur and the existing facilities would continue to be used. Furthermore, additional facilities would need to be made available on base to accommodate the restructuring of AMOG. As a result of the restructuring of AMOG to CRW, approximately 50 to 150 new personnel would be permanently stationed at Travis AFB and appropriate facilities for the TDC and RAU would need to be secured.

AMOG is currently served by 650 personnel, approximately 33 percent of whom are deployed at any time. AMOG operations are currently conducted in and near 11 buildings, the largest of which provides approximately 60,000 ft<sup>2</sup> of warehouse space. For deployment, all equipment must be retrieved from storage, tested, moved to the flightline, and loaded onto aircraft within a maximum time frame of 12 hours.

### **Alternative 2 – Proposed Action**

The Air Force proposes to construct the Center in multiple phases in the southwestern portion of the Base, in a location that is near the flightline and outside any constraint areas (e.g., explosive safety zones or environmental installation restoration areas). The Center would have a footprint of almost 670,000 ft<sup>2</sup>, including 146,000 ft<sup>2</sup> of buildings and 522,000 ft<sup>2</sup> of sidewalk, roads, and parking areas. After the reorganization of AMOG, the CRW would have approximately 700 to 800 personnel. Just as under current operations, Center facilities would be used for administration, equipment and weapons storage, and light vehicle maintenance (e.g., tire or oil changes prior to deployment). The proposed Center would be designed to accommodate safe truck access inside the structures and indoor equipment testing prior to loading onto aircraft.

Alternative 2 satisfies the purpose and need for the Proposed Action. The environmental constraint on building at this location results from having to reroute stormwater drainages and from building a small portion of the Center on Environmental Restoration Program (ERP) site SD037. Impacts potentially resulting from implementation of this alternative could be mitigated to less than significant levels.

## Environmental Consequences

The EA provides the regulatory background, as applicable, for the various environmental resource areas and evaluates potential impacts resulting from construction and operation of the proposed Center. The potential impacts to the human and natural environments were evaluated by comparing the Proposed Action to the No Action Alternative. The subsection for each environmental resource or issue assesses the anticipated direct and indirect impacts, considering both short- and long-term effects of the alternatives.

Deactivation of the 615<sup>th</sup> Air Mobility Operations Group (AMOG) and activation of the 615<sup>th</sup> CRW took place on April 11, 2005. The following assumptions have been made with regard to stationing TDC and the RAU at Travis AFB:

- Alternative 1: The locations of the facilities to be made available for TDC and the RAU have not yet been identified. However, as stated in Section 2.4.1, it is assumed that they would be occupying existing buildings and new construction would not be required. The approach to the analysis accounts for the additional personnel to be stationed at Travis AFB and qualitatively addresses associated impacts.
- Alternative 2: The Proposed Action includes construction of facilities for TDC and the RAU. The schedule for construction of these later phases is to be determined. To provide a conservative analysis of potential impacts, it is generally assumed that the Center would be built in one phase. In instances where consideration of the various phases provides a more conservative or appropriate approach (e.g., in conducting the conformity analysis in Section 4.2, Air Quality), the method of evaluating impacts is explicitly noted.

## Air Quality

### Alternative 1

Under the No Action Alternative, construction would not occur and air pollutant emissions associated with construction would not be generated. The number of personnel is anticipated to increase from current staffing levels for operation of the new facilities. The personal vehicles of the additional personnel driving to the site would generate additional vehicular air emissions, which would result in negligible, long-term adverse impacts to air quality.

### Alternative 2

The Proposed Action would have temporary, short-term adverse impacts to air quality as a result of construction emissions. All construction-related impacts are expected to be local (i.e., confined to the construction site area) and limited to the duration of the construction activities.

Long-term adverse impact would include the operation emissions from two new parts cleaners, space heating systems, and mobile sources emissions from the additional personnel traveling to the new facilities.

Emissions of volatile organic compounds, nitrogen oxides, and carbon monoxide during the construction and operation of the proposed Center would be below the de minimis

thresholds of 100 tons per year for each pollutant. Furthermore, the potential increase in volatile organic compound, nitrogen oxide, and carbon monoxide emissions for both construction and operation are below the 10 percent threshold considered to determine regional significance.

## Noise

### Alternative 1

The No Action Alternative would not result in construction activities. Therefore, no construction noise would occur. Current operational noise levels are not expected to change.

### Alternative 2

Project-related noise exposure changes would result from construction activities under the Proposed Action. After construction, no change in noise levels is anticipated during use or operation.

Noise associated with construction activities would be temporary, occur during daytime hours, and vary in levels, depending on the sources in use and types of activities. Noise associated with flightline activities at the Alternative 2 site is approximately 65 to 70 decibels (Air Force, 2005). There are no sensitive receptors within 1,000 feet of the Alternative 2 site. The closest buildings are within 100 feet of the site boundary. These buildings could experience a slight elevation in noise levels during construction activities. The increase in noise from the project should be minor and temporary. Construction activities are not expected to result in significant noise impacts.

## Hazardous Materials, Wastes, Environmental Restoration Program Sites, and Stored Fuels

Both project alternatives would generate hazardous and nonhazardous waste. Travis AFB has procedures in place for handling and disposing of wastes, hazardous materials, and fuels. Both project alternatives would comply with these procedures. Compliance with waste management procedures would reduce potential impacts to less than significant levels. Neither the current facility locations nor the Proposed Action site is located on or near stored fuel locations; therefore, impacts to stored fuel locations are not anticipated.

### Alternative 1

Implementation of the No Action Alternative would not result in changes to current hazardous waste production or waste management practices. Locating TDC and the RAU at Travis AFB would increase the production of solid waste from warehousing and administrative activities. Disposal of the waste would be in accordance with the Travis AFB pollution prevention and waste management plans and, therefore, result in less than significant impacts.

### Alternative 2

The Proposed Action includes installation of a vehicle wash rack and associated oil/water separator. This alternative would result in an increase in onbase workers and a resulting increase in solid waste generation from warehousing and administrative activities.

Hazardous and solid waste handling and management would be conducted in compliance with applicable waste management procedures; therefore, any impact would be less than significant.

Several ERP sites are located near the Proposed Action site. The southern boundary of the Proposed Action overlaps the northern boundary of ERP site SD037. Both soil and groundwater contamination are associated with SD037, but no contamination has been identified on the portion of SD037 that overlaps the Proposed Action site. Coordination with the Base Remediation Program Manager would be conducted prior to construction. In addition, a contingency plan would be prepared that requires contacting the Base Remediation Program Manager if contamination were encountered during construction. Because there are no known contaminants on the Proposed Action site and appropriate steps would be taken in the unlikely event that contamination were discovered at the site, potential impacts to human health and the environment from the construction and operations of the Proposed Action would be less than significant.

## Water Resources, Floodplains, and Wastewater

Neither alternative is located within the 100-year floodplain. Neither alternative would use groundwater or release water in a way that could impact groundwater. Therefore, no significant impacts to floodplains, surface water, or groundwater are expected from either project alternative.

### Alternative 1

If Alternative 1 were selected, no changes to water resources or the stormwater drainage system would occur. The total amount of wastewater created would increase by the amount generated by the additional TDC and RAU personnel. However, when compared to the total amount of sewage generated basewide, the additional wastewater generated would be less than significant.

### Alternative 2

Construction would potentially produce short-term water quality impacts to the drainage ditch, and ultimately to Union Creek, from erosion during earth-moving activities. A dig permit (60 AMW Form 55) would be acquired prior to construction. The project would comply with all applicable restrictions set forth in the stormwater permit, the stormwater pollution prevention plan, and the dig permit. Best Management Practices would be implemented in accordance with these permits to prevent erosion. Compliance with the relevant permits and implementation of Best Management Practices would reduce any impacts from construction activities or stormwater discharges to Union Creek to less than significant levels.

The area that the Center would occupy represents 0.2 percent of the total area of Travis AFB. This increase is considered less than significant and is not expected to contribute significantly to flooding. In addition, Travis AFB has conducted studies of the stormwater drainage system and is planning future activities to address stormwater drainage system deficiencies (Travis AFB, 2002).

Implementing the Proposed Action could alter the amount and the conveyance path of the wastewater generated at the Proposed Action site. The amount of wastewater generated at the Base would not be different from those under the No Action Alternative, but the wastewater entering the sanitary sewer system at the Proposed Action site would increase because of the centralization of AMOG facilities. These changes would not result in significant impacts.

## Biological Resources – Federal- and State-listed Threatened or Endangered Species

### Alternative 1

Under the No Action Alternative, construction of the Center would not occur and the existing practices would continue. TDC and RAU would be located in existing buildings at Travis AFB and new construction would not be required. The No Action Alternative would not result in any construction or other changes to the physical environment and, therefore, not result in impacts to biological resources.

### Alternative 2

The Alternative 2 site is currently an open field. No known wetlands (i.e., riparian, vernal pools, or meadows) are located on the site (Travis AFB 2002a and 2003; CH2M HILL, 2003). However, a vernal pool exists approximately 200 feet west of the boundary of the Alternative 2 site. Surveys were conducted in 1991, 1995, and 2001 to determine the potential presence of special-status flora, fauna, or habitats at the Alternative 2 site and its vicinity. The surveys did not identify threatened, endangered, or rare species or their habitats at the site. As a precautionary measure, exclusion fencing and an environmental monitor would be used during construction to keep construction equipment and workers a minimum distance of 100 feet from the vernal pool. Therefore, impacts to wetlands or threatened, endangered, or rare species and their habitats would not occur.

The western burrowing owl (*Athene cunicularia hypugea*), a federal and state Species of Special Concern, was identified on the western portion of the Base in 1999 surveys (Travis AFB, 2003). A burrow with burrowing owls was identified at the Proposed Action site in 2005. Onsite passive relocation would minimize impacts to these birds. The owls would be relocated during the non-breeding season and in consultation with Environmental Flight. Owls would be excluded from burrows in the immediate impact zone and within a 50-meter buffer zone surrounding the location of the Proposed Action by installing one-way doors in burrow entrances. The use of passive relocation techniques would reduce impacts to burrowing owls to a less than significant level.

## Socioeconomic Resources

### Alternative 1

Selection of the No Action Alternative would result in minimal beneficial impacts to the socioeconomic resources at the Base and Solano County. Under the No Action Alternative, more personnel would be added to accommodate the restructuring of AMOG to CRW. The added personnel would contribute positively to the economic base of the area, but the

contribution would be minor compared to current economic activities at Travis AFB and negligible compared to the overall economy of Solano County.

### **Alternative 2**

Implementation of Alternative 2, the Proposed Action, would have a minor, temporary impact on socioeconomic resources resulting from a temporary increase of contract employees (construction workers) at the Base. The financial expenditure for this project is minor when compared to ongoing construction activities in the region, and would have no appreciable effect on the regional economy. However, there would be minor, short-term economic benefits to local convenience businesses from construction workers purchasing meals, gas, and other commodities in the vicinity of the Base. The impacts to socioeconomic conditions from temporary employment would be beneficial, but negligible compared to the Base or county economy. There would be no change in socioeconomic conditions compared to the No Action Alternative from addition of more permanent personnel to Travis AFB.

## **Cultural Resources**

### **Alternative 1**

One of the 11 buildings currently being used by AMOG, Building 904, is considered a cultural resource because it is potentially eligible for inclusion in the National Register of Historic Places (historic buildings). If the No Action Alternative were selected, current practices would continue and construction would not occur, resulting in no change in impacts to cultural resources.

### **Alternative 2**

There are no known archeological sites, historic buildings, or other culturally sensitive areas at the proposed site for Alternative 2; however several buildings potentially eligible for inclusion in the National Register of Historic Places (historic buildings) are located on the periphery of the site. Six historic buildings are approximately 50 feet from the Proposed Action site. Construction of Alternative 2 is not anticipated to impact any of the historic buildings that are in the vicinity of the site. Adherence to a Base-issued dig permit and contingency plan to be implemented in case cultural or archaeological resources would be encountered would reduce any potentially significant impacts to cultural resources to less than significant levels.

## **Land Use**

### **Alternative 1**

Under the No Action Alternative, construction of the Center would not occur, and there would be no change to the existing land use. The TDC and RAU would be housed in existing facilities with compatible land use designations.

### **Alternative 2**

According to the Travis AFB General Plan land use maps, the existing and future land use designation for the Proposed Action site is Aircraft Operations and Maintenance (Travis AFB, 2002). This alternative would be compatible with the current and future land

use designation. There are no land use restrictions that would conflict with the Proposed Action. Therefore, there would be no impact to land use from the Proposed Action.

## Transportation System

### Alternative 1

The No Action Alternative assumes that the construction of the Center would not occur and existing facilities would continue to be used. Current traffic level and patterns to the various AMOG facilities would be maintained, with the exception of the CRW requiring additional personnel to operate upon build-out. Impacts to transportation would be less than significant compared to overall Base traffic.

### Alternative 2

The roadways impacted by the construction traffic would be the main Base thoroughfares, Dixon Avenue and Ragsdale Street. According to the Travis AFB General Plan, no significant transportation or parking issues are associated with either thoroughfare (Travis AFB, 2002). Traffic impacts as a result of the proposed construction would be temporary and, therefore, less than significant.

The Proposed Action would not add vehicle traffic to Travis AFB when compared to the No Action Alternative. AMOG personnel would drive to a different location onbase as compared to the No Action Alternative. As under Alternative 1, vehicle transportation of personnel to and from the airfield would be required, although for a shorter distance because the Center would be closer to the flightline. Impacts to the transportation system resulting from implementation of this alternative would be less than significant.

## Airspace/Airfield Operations

### Alternative 1

No change in operations of the airspace/airfield would result from implementation of the No Action Alternative.

### Alternative 2

The Center would be located outside of airspace or airfield operational areas. The Center would be constructed in an area that complies with UFC 3-260-01 standards for location, with respect to the runway centerline and apron clearance. Construction of the building would not result in impacts to airspace or airfield operations.

## Safety and Occupational Health

### Alternative 1

Implementing the No Action Alternative would not change health or safety conditions.

### Alternative 2

Implementation of Alternative 2 would require the construction of a new buildings and paved areas, using military and civilian personnel. The potential for adverse impacts to safety and occupational health are expected to be minor and limited to the duration of con-

struction. The Proposed Action would follow all applicable rules and regulations regarding safety and occupational health. A health and safety plan for construction would be prepared. Construction areas would be secured as necessary to prevent unauthorized personnel from entering the work sites.

During operation, implementation of Alternative 2 would provide modern facilities for the administration, warehousing, and vehicle maintenance needs of the AMOG and, after transition, CRW. The facilities would comply with applicable design codes, and activities performed in and around the facilities would follow standard operating procedures. The facilities would be built for the intended use, and would thus be safer than the facilities currently used, resulting in a small beneficial impact during operation.

Only military personnel are involved in the Center operations. Therefore, impacts to public health are not anticipated.

## **Environmental Management (Including Geology, Soils, and Pollution Prevention)**

### **Alternative 1**

There would be no change to geology, soils, or pollution prevention if the No Action Alternative were implemented.

### **Alternative 2**

No important geological or soil resources are present in the project area. Construction of Alternative 2 would disturb surface soils and permanently alter the ground surface from a soil surface to a paved surface. The Proposed Action is not expected to result in impacts to geology or soils.

Implementation of the Proposed Action would comply with the overall objectives of the pollution prevention program at Travis AFB. Construction of the facility would produce some waste in the form of construction debris, and measures to prevent pollution would be taken.

Waste production during operation of the building would be approximately equal to the current levels. Improved facilities are expected to enhance the proper management and storage of all waste types. Source reduction and waste recycling would be implemented to the extent practicable. This alternative is not expected to result in impacts to waste production or pollution prevention management.

## **Environmental Justice and Protection of Children**

### **Alternative 1**

Implementation of the No Action Alternative would not affect minority or low-income populations, or children.

### **Alternative 2**

No low-income or minority populations in the surrounding area would be affected by the construction of the Proposed Action. In addition, the Proposed Action would not cause

adverse impacts with the potential to disproportionately affect such populations if they were present.

## Indirect and Cumulative Impacts

Implementing the Proposed Action is not expected to result in significant indirect impacts to environmental or socioeconomic resources. The Proposed Action would not result in significant growth-inducing effects, induced changes in population, or related effects. Compared to the No Action Alternative, Alternative 2 would not result in changes associated with the addition of more permanent personnel to Travis AFB.

Alternative 1 is the No Action Alternative and would have little potential for cumulative impacts. Projects considered for cumulative impact in this EA are those that are ongoing or planned to begin within the next 3 years at Travis AFB. The main cumulative impacts to air quality would result from multiple construction projects occurring simultaneously. Not all of the actions planned would be constructed simultaneously. Impacts to air resource resulting from implementation of either alternative would conform to the SIP and not be regionally significant.

The Proposed Action would add to the total amount of impervious surface at the Base. This increase in impervious surface, in conjunction with other planned future actions, could significantly increase the amount of stormwater runoff from the Base. Stormwater discharge from the Base is regulated under the Travis AFB Industrial Activities Storm Water Discharge Permit (Travis AFB, 2002). Cumulative impacts from multiple actions would be addressed and mitigated by adhering to the basewide permits and programs that are currently in place.

The stormwater drainage system and the sanitary sewer system are inadequate for current Base needs. The Base has conducted studies to define system deficiencies and is developing remedial measures. The design of future sewer and stormwater upgrades should take into account the cumulative impacts resulting from the planned actions. The future actions of the Base should reduce cumulative impacts to the stormwater drainage system and the sanitary sewer system to less than significant levels.

## Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are expected from the construction or operation of the Center under the Proposed Action Alternative.

## Relationship between Short-term Uses and Enhancement of Long-term Productivity

The purpose of the Proposed Action is to construct a Center that is adequate to meet the needs of Base operations. AMOG operations are currently housed in 11 buildings that are not adequate for Base needs and detract from Base operations. Construction of centralized AMOG facilities would reduce the potential for errors and accidents. It would also improve weapons security and mission readiness by reducing the response time and prepare the Base for the reorganization from AMOG to CRW. Long-term productivity would be enhanced by implementing Alternative 2 because the inefficiencies resulting from the use of the current facilities would be remedied.

## Irreversible and Irretrievable Commitment of Resources

Resources expected to be affected during the long-term use of the building include additional electricity and gas for heating.

## Works Cited

CH2M HILL. 2003. *Groundwater Sampling and Analysis Program, 2002-2003 Annual Report*. November.

CH2M HILL. 2000. *Stormwater Drainage System Improvements Plan, Volume 1*. September.

Travis Air Force Base (AFB or Base). 2002. *Travis Air Force Base General Plan*. October.

Travis Air Force Base (AFB or Base). 2003. *Integrated Natural Resources Management Plan*. September.

U.S. Air Force (Air Force). 2005. Memorandum from Wayne Williams/60 CES/CECP regarding comments on Draft Environmental Assessment for Global Reach Deployment Center. January 19.

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# Acronyms and Abbreviations

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µg/m <sup>3</sup>	micrograms per cubic meter
Air Force	U.S. Air Force
AFB	Air Force Base
AMOG	Air Mobility Operations Group
AST	aboveground storage tank
BAAQMD	Bay Area Air Quality Management District
Base	Travis Air Force Base
Basin	San Francisco Bay Area Air Basin
BEAR	Basic Expeditionary Airfield Resources
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
Center	Global Reach Deployment Center and ancillary facilities
CES/CEV	Civil Engineering Squadron Environmental Flight
CEQ	President's Council on Environmental Quality
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CRW	Contingency Response Wing
CWA	Clean Water Act
dB	decibel(s)
EA	Environmental Assessment
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERP	Environmental Restoration Program
ft <sup>2</sup>	square feet

LUC	land use control
MMBtu/hr	million British thermal units per hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO <sub>x</sub>	nitrogen oxide
O/WS	oil/water separator
PM <sub>10</sub>	particulate matter less than 10 microns
ppm	parts per million
Q/D arc	explosive safety quantity-distance zone
RAU	Reserve Associate Unit
RCRA	Resource Conservation and Recovery Act
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
TDC	Theater Deployable Communications
tpy	tons per year
Travis AFB General Plan	Travis Air Force Base General Plan
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
UST	underground storage tank
VOC	volatile organic compound

# Purpose of and Need for the Proposed Action

---

## 1.1 Introduction

The U.S. Air Force (Air Force) Air Mobility Command at Travis Air Force Base (AFB or Base) in Fairfield, California (see Figure 1-1; figures are located at the end of each section), proposes to construct a Global Reach Deployment Center and ancillary facilities (Center) for the 615<sup>th</sup> Air Mobility Operations Group (AMOG).

AMOG plans, trains, and equips forces to provide core mobility support for missions assigned by the U.S. Transportation Command. The primary functions within AMOG are command and control, aerial port, and aircraft maintenance. These functions are supported by numerous specialties, including Security Forces, Communications, and Supply. AMOG is transitioned to a Contingency Response Wing (CRW), 11 April 2005, which included Contingency Response Groups. It is anticipated that 700 to 800 personnel will be associated with the CRW.

The Center is a multi-phased project that would have a footprint of almost 670,000 square feet (ft<sup>2</sup>) and consist of warehouses, equipment and weapons storage, administrative offices, paved areas, and facilities for vehicle maintenance and storage. The general location of the Proposed Action is shown on Figure 1-2 and the planned construction phasing is shown on Figure 1-3.

Travis AFB, with the support of Air Mobility Command and the Air Force Center for Environmental Excellence, has prepared this environmental assessment (EA) in accordance with National Environmental Policy Act (NEPA) implementing regulations 40 Code of Federal Regulations (CFR) 1500 through 1508, Air Force Regulation 32 CFR 989, and Department of Defense directives. This EA has been prepared to determine whether the Proposed Action would have a significant adverse effect on the quality of the environment.

## 1.2 Need for the Action

The purpose of the Proposed Action is to provide an environmentally safe area to perform the full spectrum of Global Reach Laydown operations, including a centralized storage and deployment area for AMOG. The need for the project is twofold, as follows:

- Current operations are distributed across the Base (see Figure 1-4) and housed in facilities that are inadequate to implement AMOG's mission effectively.
- AMOG reorganized as a CRW, and although the future mission is similar, the organizational structure will be more complex and larger, requiring additional facilities.

Construction of centralized AMOG facilities would reduce the potential for errors and accidents (e.g., accidental fuel spills). It would also improve weapons security and mission

readiness by reducing response time. Moreover, it would prepare the Base for the reorganization from AMOG to CRW.

### 1.3 Objectives of the Action

The objectives of the Proposed Action are to build centralized AMOG facilities onbase to improve AMOG administration, operations, storage, and deployment. The proposed Center includes a warehouse, a low-bay maintenance shop, a wash rack with vehicle maintenance facility, a war reserve material (i.e., Swift Basic Expeditionary Airfield Resources [BEAR]) storage facility, and an adjacent covered storage. The Center could also serve other Air Force components on an “as-available” basis. The proposed Center must perform as follows:

- Centralize facilities to meet a 12-hour designed operational capability response time for deployment operations
- Meet seismic vulnerability and Anti-Terrorism/Force Protection criteria
- Provide suitable indoor storage space for Swift BEAR assets and protect vulnerable equipment from elements
- Provide space to accommodate efficient handling and delivery of equipment to flightline
- Establish secured weapons storage that meets AMOG requirements
- Increase the size of the wash rack facility to accommodate the expandable shelters and Mobility Air Reporting and Communications systems
- Provide adequate facilities to prepare for the future reorganization

### 1.4 Location of Proposed Action

Travis AFB is located in the City of Fairfield, Solano County, and extends over approximately 5,128 acres (see Figure 1-1). The Base is located off Interstate 80, approximately midway between Sacramento and San Francisco and 7 miles northeast of central Fairfield.

The Proposed Action is located in the southwest portion of the Base adjacent to W Street, Ragsdale Street, and Dixon Avenue, just north of the flightline (see Figure 1-2).

### 1.5 Scope of the Environmental Assessment

This EA documents and analyzes the potential environmental and socioeconomic effects associated with the Proposed Action, relative to the No Action condition.

### 1.6 Decision(s) that Must be Made

The Chairman of the Environmental Protection Committee at Travis AFB is responsible for selecting an alternative to improve air mobility operations. A decision to take No Action (Alternative 1) would result in Travis AFB maintaining the current various locations onbase

and not constructing the warehouse/storage building and administrative Center. In addition, facilities would have to be dedicated onbase to support the new functions resulting from the reorganization. A decision to take action (Alternative 2) would result in Travis AFB proceeding with the proposed construction of the Center.

## 1.7 Applicable Regulatory Requirements and Required Coordination

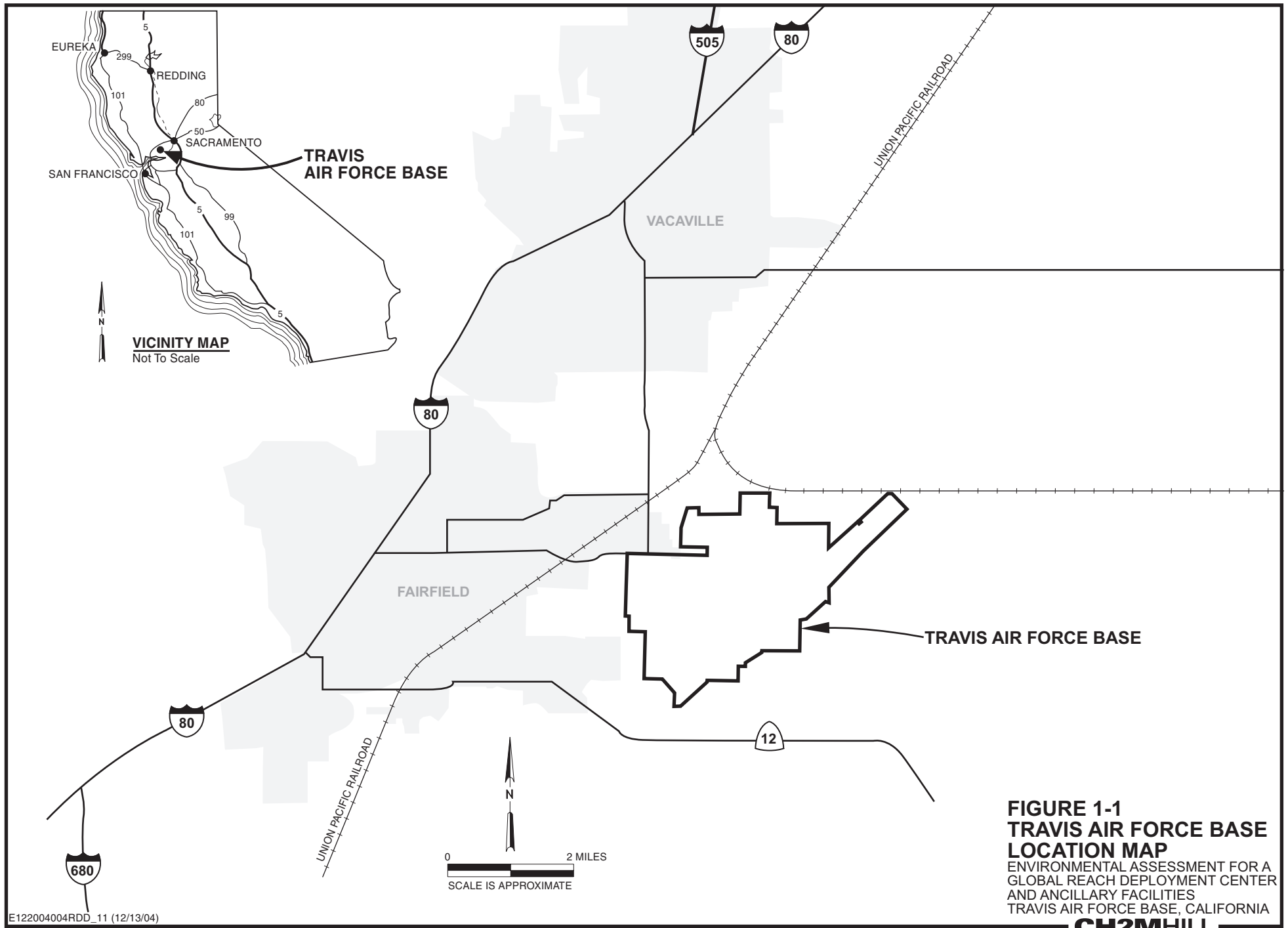
This environmental analysis has been conducted in accordance with the President's Council on Environmental Quality (CEQ) regulations, 40 CFR Sections 1500 through 1508, as they implement the requirements of NEPA, 42 U.S. Code (USC) Sections 4321 et seq., and Air Force Regulation 32 CFR 989, The Environmental Impact Analysis Process. Air Force Regulation 32 CFR 989 specifies the procedural requirements for the implementation of NEPA and preparation of an EA, and directs Air Force officials to consider environmental consequences as part of the planning and decisionmaking process.

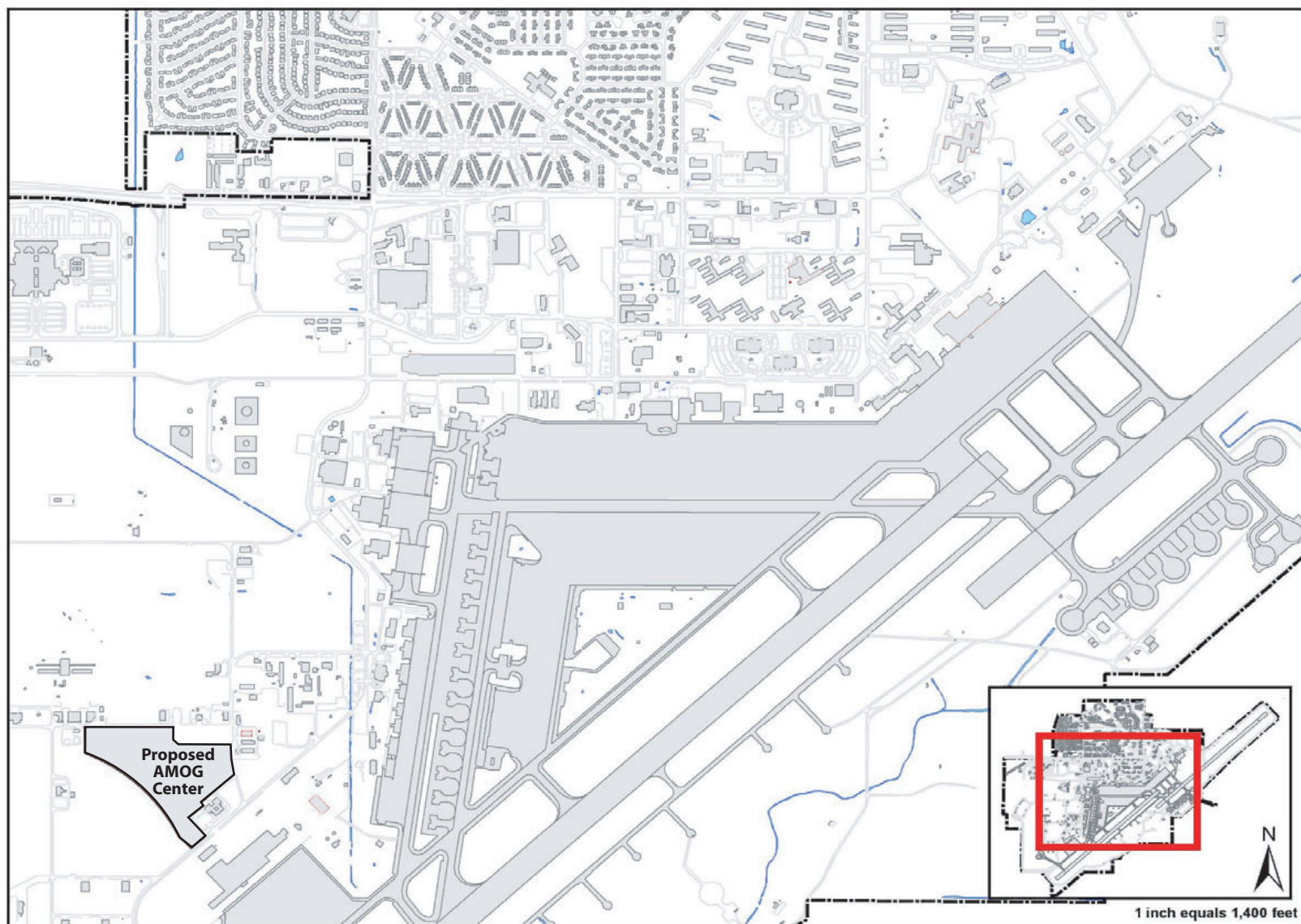
Other environmental regulatory requirements relevant to the Proposed Action and alternative are also identified in this EA. Regulatory requirements under the following programs, among others, are assessed:

- Noise Control Act of 1972
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- National Historic Preservation Act
- Archaeological Resources Protection Act
- Endangered Species Act of 1973
- Resource Conservation and Recovery Act (RCRA)
- Comprehensive Environmental Restoration, Compensation, and Liability Act
- Toxic Substances Control Act of 1970
- Occupational Safety and Health Act

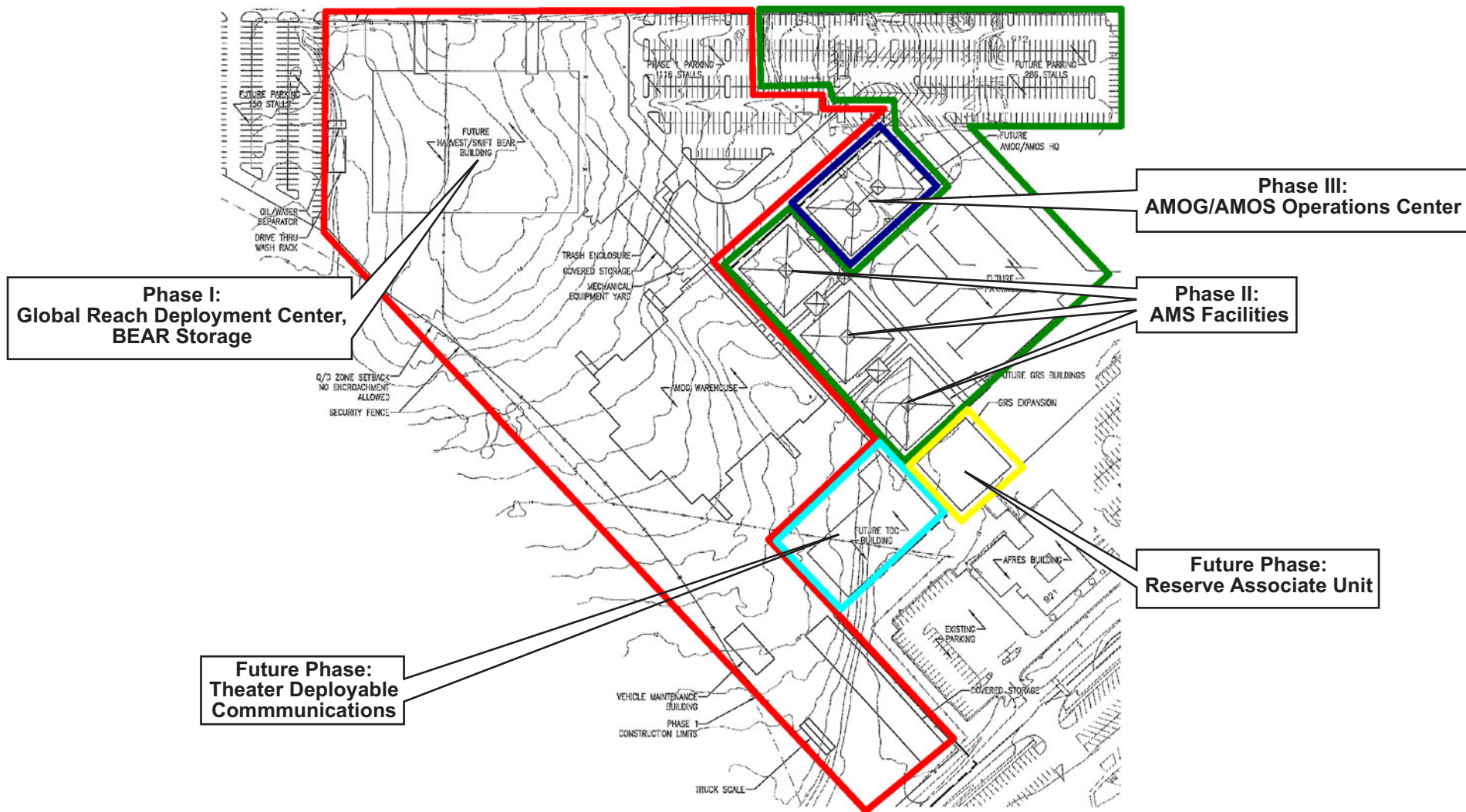
Requirements also include compliance with Executive Order (EO) 11988 (Floodplain Management); EO 11990 (Protection of Wetlands); EO 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations); and EO 13045 (Protection of Children from Environmental Health Risks and Safety Risks).

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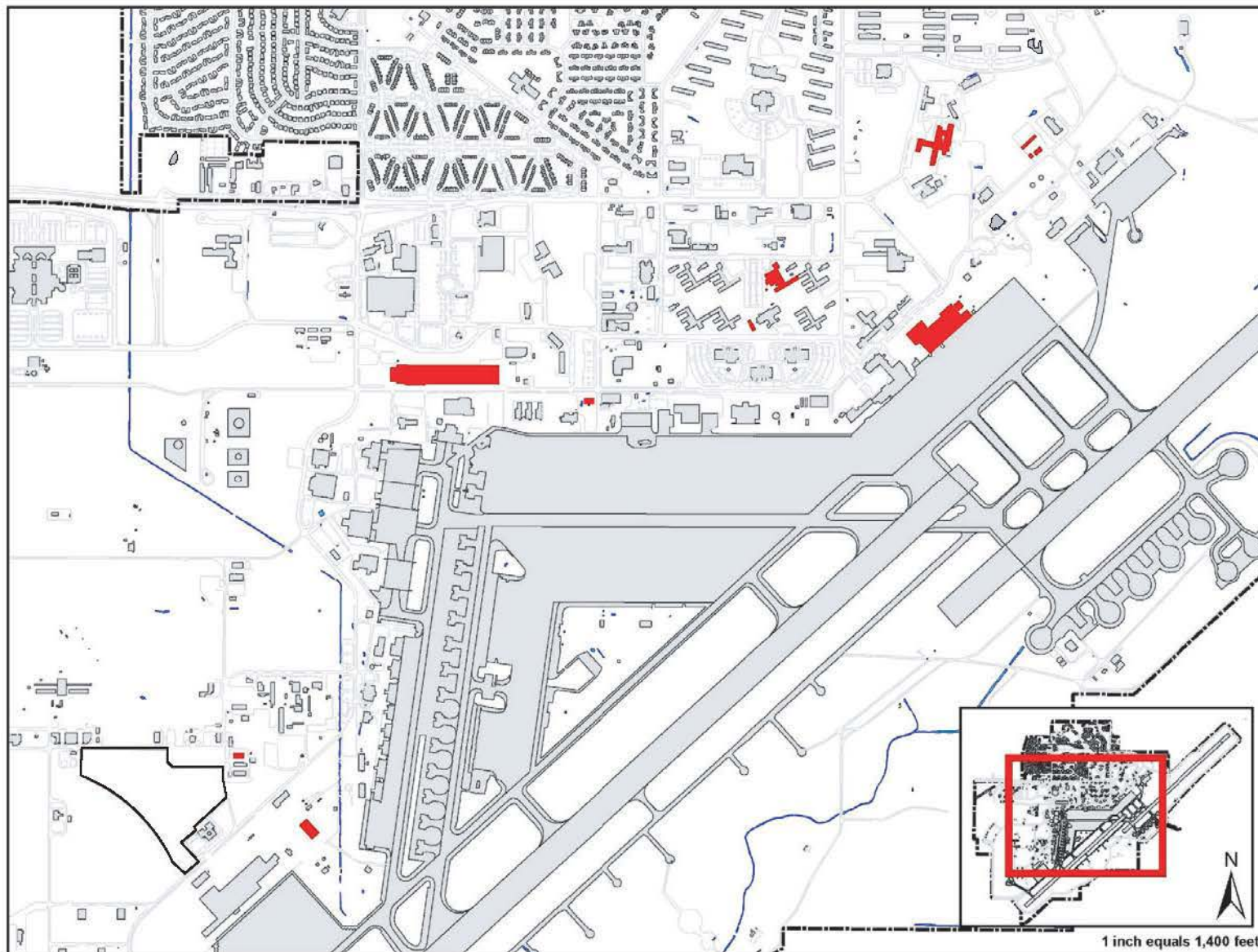




**FIGURE 1-2**  
**PROPOSED AMOG**  
**FACILITIES LOCATIONS**  
ENVIRONMENTAL ASSESSMENT FOR A  
GLOBAL REACH DEPLOYMENT CENTER  
AND ANCILLARY FACILITIES  
TRAVIS AIR FORCE BASE, CALIFORNIA  
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**FIGURE 1-3  
PROPOSED AMOG  
CONSTRUCTION PHASING**  
ENVIRONMENTAL ASSESSMENT FOR A  
GLOBAL REACH DEPLOYMENT CENTER  
AND ANCILLARY FACILITIES  
TRAVIS AIR FORCE BASE, CALIFORNIA  
**CH2MHILL**



#### LEGEND

■ FACILITY CURRENTLY USED BY AMOG

**FIGURE 1-4**  
**CURRENT AMOG**  
**FACILITIES LOCATIONS**  
 ENVIRONMENTAL ASSESSMENT FOR A  
 GLOBAL REACH DEPLOYMENT CENTER  
 AND ANCILLARY FACILITIES  
 TRAVIS AIR FORCE BASE, CALIFORNIA  
**CH2MHILL**

# Description of the Alternatives, Including the Proposed Action

---

## 2.1 Introduction

This section presents the criteria for selecting the alternatives considered in this EA and describes the alternatives carried forward for detailed analysis.

## 2.2 Selection Criteria for Alternatives

Reasonable alternatives for global reach storage and deployment at Travis AFB should accomplish the following in a cost-efficient and cost-effective manner, with minimal impact to human health and the environment:

- Be close to the flightline
- Meet or exceed state environmental requirements for building and parking lot construction
- Comply with Air Force and Department of Defense planning and design manuals, design standards, and safety requirements for airfield operations
- Centralize AMOG facilities for safe and efficient deployment operations
- Provide safe weapons storage
- Meet minimum Anti-Terrorism/Force Protection requirements
- Meet or exceed seismic requirements
- Provide adequate space (in excess of 600,000 square feet [ft<sup>2</sup>]) for indoor storage, administration, and maintenance to accommodate efficient handling and delivery of deployment operations

## 2.3 Alternatives Considered but Eliminated from Detailed Study

This EA analyzes the No Action Alternative and the Proposed Action. The proposed location of the Center was selected on the basis of the need for adequate space (in excess of 600,000 ft<sup>2</sup>) to combine operations located close to the flightline and outside any areas of constraint (e.g., the explosives safety zone or environmental restoration sites). Upgrading current facilities to meet operational requirements was considered as an alternative but not carried forward for further analysis because upgrading would not meet the selection criterion of providing a centralized location for AMOG activities.

Another alternative considered but eliminated was to locate the Center south of Hangar Avenue, near the David Grant Medical Center, in an open field. This alternate site has adequate contiguous space, but is limited by the presence of Contra Costa goldfields (*Lasthenia conjugens*), a federally listed plant species. Building the Center at this site would also involve building within the land use restrictions associated with Environmental Restoration Program (ERP) Site LF044. This alternative was rejected because, in addition to the significant environmental constraints, the site is not sufficiently near the flightline to qualify as a reasonable alternative under the selection criteria.

## 2.4 Description of Proposed Alternatives

### 2.4.1 Alternative 1 – No Action

Under the No Action Alternative, construction of the Center would not occur and the existing facilities would continue to be used. Furthermore, additional facilities would have to be made available onbase to accommodate the restructuring of AMOG.

AMOG's mission is the quick and efficient deployment of military personnel and their equipment. AMOG is served by 650 personnel, approximately 33 percent of whom are deployed at any time. Equipment includes arms, diesel fuel, batteries, vehicles, generators, sensitive electronic equipment, shelters, and loading equipment. AMOG operations are currently conducted in and near 11 buildings, the largest of which provides approximately 60,000 ft<sup>2</sup> of warehouse space. Buildings 1, 241, 248, 374, 376, 377, 381B, 549, 563, 904, and 939 are currently used for AMOG operations. In addition, approximately 81,000 ft<sup>2</sup> of fenced, outdoor storage adjacent to Buildings 374, 376, and 377 are used by AMOG. Weapons are stored in the Base armory. For deployment, equipment is moved from the warehouse to the flightline in "chalk order" (i.e., the order in which it is to be loaded into one or more aircraft). It is held at the flightline until it is loaded into the aircraft. Personnel must meet a 12-hour designed operational capability response time, meaning that all equipment has to be retrieved from storage, tested, and readied for loading within a maximum time frame of 12 hours.

After AMOG is restructured into the CRW, additional space would be required for equipment and additional personnel from Theater Deployable Communications (TDC) and the Reserve Associate Unit (RAU). It has not yet been determined where and how additional facilities would be made available to accommodate the increased demand. For the purpose of this EA, however, it is assumed that existing buildings would be used to house TDC and RAU, and new construction would not be needed.

### 2.4.2 Alternative 2 – Proposed Action

The Air Force proposes to construct the Center in multiple phases in the southwestern portion of the Base (see Figures 1-2, 1-3, and 2-1). The location is near the flightline and outside constraint areas (e.g., explosive safety zones or environmental installation restoration areas). The Center comprises almost 670,000 ft<sup>2</sup>, including 522,000 ft<sup>2</sup> of sidewalks, roads, and parking areas. The remainder of the site would be occupied by buildings (approximately 146,000 ft<sup>2</sup>). After the reorganization of AMOG, the CRW would have approximately 700 to 800 personnel. As under current operations, facilities would be

used for administration, equipment and weapons storage, and light vehicle maintenance (e.g., tire or oil changes prior to deployment). The Center would include the following:

- A high-bay warehouse with mezzanines designed for palletized equipment to maximize storage
- A low-bay maintenance shop to maintain equipment
- A vehicle wash rack equipped with an oil/water separator (O/WS) to clean high-value equipment
- Adjacent covered storage to allow efficient storage and assembly of mobility support equipment packages
- War reserve material storage for five Swift BEAR packages containing electrical equipment, tents, fire extinguishers, tools, and personal hygiene and protective equipment
- Administrative offices
- Small-arms armory

The proposed Center would be designed to accommodate safe truck access inside the structures and indoor equipment testing prior to loading onto aircraft. The building would also include a climate-control system for areas where sensitive electronics are housed. The facilities would be built in the following phases (see Figure 1-3):

- I – Global Reach Deployment Center and BEAR storage
- II – Air Mobility Squadron facilities
- III – AMOG/ Air Mobility Operations Squadron Operations Center
- Future – In two future phases, facilities for TDC and RAU would be built.

Appendices A and B present Air Force Forms 813 and 1391 for the Proposed Action. The Center would also be used by other organizations on an “as available” basis, depending on compliance with Air Force requirements.

## 2.5 Description of Past and Reasonably Foreseeable Future Actions Relevant to Cumulative Impacts

This EA identifies actions that have been conducted in the past, are ongoing or in the planning stages, and future actions that are related to the Proposed Action. Details of the actions that have the potential to interact with the Proposed Action are included in Section 4.15, Indirect and Cumulative Impacts.

## 2.6 Identification of Preferred Alternative

The Air Force’s preferred alternative for this EA is the Proposed Action described in Section 2.4.2. This alternative best meets the selection criteria.

## 2.7 Comparison of the Environmental Impacts of Alternatives

Table 2-1 compares the environmental effects of the alternatives described above.

TABLE 2-1

Summary of Potential Environmental and Socioeconomic Consequences

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Resource	Environmental and Socioeconomic Consequences <sup>a</sup>	
	Alternative 1 No Action	Alternative 2 Proposed Action
Air Quality	Less than significant	Less than significant
Noise	No effect	Less than significant (construction); no effect (operation)
Hazardous Materials, Wastes, ERP Sites, and Stored Fuels		
Hazardous Materials	No effect	Less than significant
Wastes	Less than significant	Less than significant
ERP Sites	No effect	Less than significant
Stored Fuels	No effect	No effect
Water		
Water Quality	No effect	Less than significant
Wastewater	Less than significant	Less than significant
Flooding	No effect	No effect (construction); less than significant (operation)
Biological		
Vegetation and Wildlife	No effect	Less than significant
Federal- and State-listed Threatened or Endangered Species	No effect	No effect
Wetlands	No effect	No effect
Socioeconomic	Slightly beneficial	Short-term, beneficial (construction); slightly beneficial (operation)
Cultural	No effect	Less than significant
Land Use	No effect	No effect
Transportation System	Less than significant	Less than significant
Airspace/Airfield Operations	No effect	No effect
Safety and Occupational Health	No effect	Less than significant (construction); beneficial (operation)
Environmental Management		
Geology and Soils	No effect	Less than significant (construction); no effect (operation)
Pollution Prevention	No effect	Less than significant (construction); no effect (operation)
Environmental Justice	No effect	No effect
Indirect and Cumulative Impacts	Less than significant	Less than significant

<sup>a</sup>Under Alternative 1, construction would not take place and, therefore, there would be no effects from construction. Impacts indicated are associated with operation. Unless otherwise noted, all effects listed for Alternative 2 are applicable to both construction and operation. Effects are compared to the No Action Alternative.



**FIGURE 2-1**  
**AMOG CAMPUS RENDERING**  
ENVIRONMENTAL ASSESSMENT FOR A  
GLOBAL REACH DEPLOYMENT CENTER  
AND ANCILLARY FACILITIES  
TRAVIS AIR FORCE BASE, CALIFORNIA  
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## Affected Environment

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### 3.1 Introduction

This section presents specific information about the environment at Travis AFB that could be adversely affected as a result of implementing the Proposed Action. Potential impacts resulting from the Proposed Action are described in detail in Section 4.0.

### 3.2 Air Quality

Travis AFB is located in central Solano County, which is at the eastern edge of the San Francisco Bay Area Air Basin (Basin). The Basin extends from Napa County in the north to Santa Clara County in the South. The Basin encompasses 5,340 square miles and 19 percent of California's population. The Basin is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), pursuant to a mandate from the California Air Resources Board (CARB). Only the golf course at Travis AFB extends into a neighboring jurisdiction, the Yolo-Solano Air Pollution Control District.

This section provides an overview of regional air quality, including a discussion of existing meteorological and topographical conditions, applicable federal and state regulations, regional air quality management programs, and the current air quality conditions.

#### 3.2.1 Regional Climate

California has a Mediterranean climate, with wet winters and dry summers. Although Travis AFB is not near the coast, it is located near the Carquinez Strait, a major break in the Coast Range that allows the ocean to moderate temperatures at Travis AFB. The Base usually experiences mild temperatures, with a mean annual temperature of 60 degrees Fahrenheit. The lowest temperatures occur in January, with a mean of 46 degrees Fahrenheit. The highest temperatures occur in July and August, with a mean of 72 degrees Fahrenheit. Monthly mean relative humidity typically ranges from a low of 50 percent in June to a high of 77 percent in January. The mean annual relative humidity is 60.5 percent. Precipitation is approximately 17 inches per year.

During the late summer and early fall months, Travis AFB is subject to marine air flowing from high pressure cells offshore toward low pressure in the Central Valley. Winds tend to flow from the west, range from 15 to 20 miles per hour, and are typically strongest in the afternoon. The Base occasionally experiences easterly winds generated in the Central Valley. Winds from the Central Valley tend to have higher pollutant loads.

### 3.2.2 Current Air Quality Conditions

The Basin has been assessed for compliance with California and National Ambient Air Quality Standards (CAAQS and NAAQS, respectively). Three air quality designations can be given to an area for a particular pollutant, as follows:

- **Nonattainment:** This designation applies when air quality standards have not been consistently achieved.
- **Attainment:** This designation applies when air quality standards have been achieved.
- **Unclassified:** This designation applies when there are not enough monitoring data to determine whether the area is in nonattainment or attainment.

According to CARB, the Basin is designated nonattainment for state standards for ozone, particulate matter less than 10 microns (PM<sub>10</sub>, or fugitive dust), and particulate matter less than 2.5 microns (PM<sub>2.5</sub>). Relevant ambient air quality standards are listed in Table 3-1, along with their respective attainment status. The Basin is designated attainment for nitrogen oxide (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), sulfate particulates, and lead particulates for state standards. By federal standards, the Basin is designated nonattainment for 1-hour and 8-hour ozone. All other criteria pollutants are designated attainment or unclassified. In addition, the urbanized areas of Solano County (which include the area occupied by Travis AFB) are maintenance areas for CO under the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). Table 3-2 lists maximum pollutant levels and days the CAAQS were exceeded from 1996 through 2002.

TABLE 3-1

Bay Area Air Quality Management District Attainment Status as of November 2004

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Pollutant	Averaging Time	California		Federal	
		Standard	Attainment Status	Standard	Attainment Status
Ozone	8 Hour	—	—	0.08 ppm	N (Marginal)
	1 Hour	0.09 ppm	N	0.12 ppm	N (Other)
CO	8 Hour	9.0 ppm	A	9.0 ppm	A (M)
	1 Hour	20.0 ppm	A	35.0 ppm	A (M)
Nitrogen Dioxide	Annual	—	—	0.053 ppm	A
	1 Hour	0.25 ppm	A	—	—
SO <sub>2</sub>	Annual	—	—	0.03 ppm	A
	24 Hour	0.04 ppm	A	0.14 ppm	A
	1 Hour	0.25 ppm	A	—	—
PM <sub>10</sub>	Annual Geometric Mean	20 µg/m <sup>3</sup>	N	50 µg/m <sup>3</sup>	A <sup>b</sup>
	24 Hour	50 µg/m <sup>3</sup>	N	150 µg/m <sup>3</sup>	U
PM <sub>2.5</sub>	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	N	15 µg/m <sup>3</sup>	U
	24 Hour	—	—	65 µg/m <sup>3</sup>	U

<sup>a</sup>Annual arithmetic mean

Notes:

N = Nonattainment

A = Attainment

M = Maintenance Area

U = Unclassified

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

— = not applicable

Travis AFB is within the jurisdiction of the BAAQMD. Permits have been issued for approximately 130 stationary sources (e.g., incinerator exhaust ports) and for more than 250 mobile sources (e.g., portable gasoline generators) (Travis AFB, 2002a). Approximately 110 sources are exempt. None of the air sources has resulted in adverse impacts to onbase or offbase resources (Travis AFB, 2003a). Compliance with BAAQMD standards and practices is detailed in the *Travis Air Force Base General Plan* (Travis AFB General Plan) (Travis AFB, 2002a).

TABLE 3-2

San Francisco Bay Area Air Basin Exceedances of the State Ambient Air Quality Standards, 1996 through 2002

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Year	Ozone <sup>a</sup>		CO <sup>b</sup>		PM <sub>10</sub> <sup>c</sup>	
	Number of Exceedance Days	Maximum 1-hour Concentration (ppm)	Number of Exceedance Days	Maximum 1-hour Concentration (ppm)	Number of Exceedance Days	Maximum 24-hour Concentration (µg/m <sup>3</sup> )
1996	34	0.138	0	8.8	18	76
1997	8	0.114	0	10.7	20	85
1998	29	0.147	0	8.7	25	100
1999	20	0.156	0	9.0	63	117
2000	12	0.152	0	9.8	42	80
2001	15	0.134	0	7.6	51	114
2002	16	0.160	0	7.7	30	84

<sup>a</sup>The sampling frequency of ozone is continuous (hourly). The CAAQS for ozone is 0.09 ppm.

<sup>b</sup>The sampling frequency of CO is continuous (hourly). The 1-hour CAAQS for CO is 20 ppm.

<sup>c</sup>Sampling of PM<sub>10</sub> is scheduled throughout the project area once every sixth day (24-hour sample). Therefore, each station has nominally 60 sampling days per year. All stations have the same schedule; that is, they all attempt to sample for PM<sub>10</sub> on the same days. The number of station-sampling days per county would depend on the number of PM<sub>10</sub> stations in the county. The 24-hour CAAQS for PM<sub>10</sub> is 50 µg/m<sup>3</sup>. Comparisons with the newly adopted PM<sub>2.5</sub> standards have not been made because the standards are new.

Source: CARB, 2004

### 3.2.2.1 Ozone

Attainment of the NAAQS for ozone in the Basin has remained relatively uniform during the last decade. Exceedances are generally attributed to unique meteorological patterns, combined with increases in emissions during the summer months. Urban vehicular emissions, industrial emissions, and high ambient temperatures in the Basin contribute to summer ozone generation and subsequent air standard violations.

In Solano County, CAAQS have been exceeded each year from 1996 through 2002. Peak hourly average ozone concentrations ranged from 0.096 to 0.129 ppm during this time. In 2003, the peak 1-hour ozone concentration was 0.101 ppm, measured by the BAAQMD at the Tuolumne Street monitoring station in Vallejo, approximately 20 miles southwest of the Base. The air monitoring station closest to the Base is the Chadbourne Road facility in Fairfield, approximately 10 miles to the west and also operated by the BAAQMD. No exceedances of the ozone standard were recorded at the Chadbourne Road facility in 2003.

### 3.2.2.2 Fugitive Dust

Fugitive dust (PM<sub>10</sub>) is generated within the area from combustion sources and wind during dry conditions (CARB, 2001). PM<sub>10</sub> levels are elevated during the winter (attributable to stable conditions and low mixing heights) because of wood smoke, vehicle exhaust, and dry, windy conditions. In 2002, the maximum 24-hour PM<sub>10</sub> concentration (monitored since 2001) within Solano County was 84 µg/m<sup>3</sup>. Federal 24-hour PM<sub>10</sub> concentrations have been monitored in Solano County since 1994. The 24-hour PM<sub>10</sub> NAAQS have not been exceeded since monitoring began.

### 3.2.3 Indoor Air Quality

Beginning in 1998, basewide studies were conducted to identify sources of radon emissions. A total of 35 locations were screened. All radon measurements were below the criteria for determining whether a detailed assessment would be required (4 picocuries per liter). Based on these studies, no further evaluation is required (Travis AFB, 2002a).

## 3.3 Noise

The Air Force typically uses the Air Installation Compatible Use Zone guidelines to promote compatible land use development. Noise is one consideration to be addressed under Air Installation Compatible Use Zone and, accordingly, Travis AFB has assessed noise levels in relation to the flightline. The descriptor of noise typically used in California is the Community Noise Equivalent Level (CNEL). The CNEL is the average sound energy level for a 24-hour day determined after the addition of a 5-decibel (dB) penalty to noise generated between 7:00 and 10:00 p.m. and a 10-dB penalty to noise events occurring at night between 10:00 p.m. and 7:00 a.m. The CNEL is calculated using the sound energy generated by individual noise events, the number of events occurring during a 24-hour period, and the time of day at which the events occur.

Maximum CNELs in excess of 80 dB are produced during flight operations. These noise levels are intermittent and localized to the flightline. The majority of the Base experiences CNELs ranging from 60 to 75 dB. Some activities at the Base produce noise levels higher than the CNELs produced by flight operations. Noise levels near the Proposed Action sites are approximately 65 to 70 dB (Air Force, 2005).

## 3.4 Hazardous Materials, Waste, Environmental Restoration Program Sites, and Stored Fuels

### 3.4.1 Hazardous Materials and Hazardous Waste

The activities conducted at Travis AFB that use the majority of hazardous materials include maintenance of aircraft, transportation equipment, and facilities. These activities contribute approximately 95 percent of the total volume of hazardous waste generated at the Base, including flammable solvents, contaminated fuels and lubricants, stripping chemicals, waste oils, waste paint, absorbent materials, chemicals stored beyond their expiration date, and asbestos (Travis AFB, 2002a). Hazardous materials are ordered, stored, and used in accordance with the Base Hazardous Materials Management Plan.

The Base maintains and implements a Hazardous Waste Management Plan to comply with RCRA, state, and Air Force regulations. The Hazardous Waste Management Plan establishes the procedures, training requirements, inspections, and record management processes for hazardous waste (Travis AFB, 1999). The Base has one facility, Building 1365, permitted for long-term storage of hazardous waste. Building 1365 is managed by the 60<sup>th</sup> Civil Engineering Squadron Environmental Flight (CES/CEV) and operated by contractors (Travis AFB, 2002a).

### 3.4.2 Solid Waste

Nonhazardous waste generated at Travis AFB during fiscal year 2001 totaled 45.5 tons per day, or 16,600 tons for the year, including both recycled waste and waste sent to a disposal facility. The amount of recycled waste, which includes composting, mulching, recycled, reused, donated, and concrete (construction/demolition) waste, averaged approximately 20 tons per day (7,470 tons for the year). The amount of nonhazardous waste sent to disposal facility averaged approximately 25 tons per day (9,150 tons for the year) (Travis AFB, 2002a). Nonhazardous solid wastes and refuse at Travis AFB are collected and disposed of by Solano County Garbage Company. Some organic matter is incinerated onbase at one of two incinerators. All solid waste is disposed of in accordance with the Solid Waste Management Plan.

### 3.4.3 Environmental Restoration Program Sites

Travis AFB has several environmental cleanup sites. The Base has implemented the ERP, administered by the 60 CES/CEV Restoration Section, to remediate all accident, disposal, and spill sites that might pose a potential threat to human health and welfare or the environment. ERP sites include landfills, spill areas, waste disposal sites, drum storage areas, underground storage tanks (UST) and piping, O/WSs, waste treatment plants, and munitions disposal sites. Some ERP sites have had extraction/remediation systems installed to facilitate site cleanup (Travis AFB, 2003a).

The facilities currently used by AMOG are located throughout the Base. Several facilities currently used by AMOG are located near ERP sites.

The Proposed Action site is not located on any ERP sites, but a small portion of the southern border of the Proposed Action site overlaps the northern boundary of ERP site SD037. Several ERP sites are located adjacent to the Proposed Action site (see Figure 3-1). ERP sites with groundwater contamination near the Proposed Action include SD037, SD041, and SD043. ERP sites with soil contamination that are located close to the Proposed Action include RW013, SD037, SD042, SD043, SS016, and SS041 (Travis AFB, 2002a).

### 3.4.4 Stored Fuels

Fuel is stored onbase in USTs and aboveground storage tanks (AST). Fuel is supplied to the flightline using a hydrant system that is supplied by seven bulk ASTs with a capacity of almost 7 million gallons. The hydrant fueling system is also associated with 21 USTs and 2 smaller ASTs, with a combined capacity of almost 19 million gallons (Travis AFB, 2002a).

Gasoline and diesel fuel used for military vehicles and ground equipment are stored in both ASTs and USTs in various locations at the Base. Thirty USTs are currently in use and

regulated by the California UST program. Activities for removal and/or replacement of 20 USTs are being conducted under the Solano County and State of California UST programs. There are also 38 deferred/exempt USTs at the Base (Travis AFB, 2002a).

## 3.5 Water Resources, Floodplains, and Wastewater

This section provides a description of the groundwater and surface water resources, floodplains, and wastewater at Travis AFB.

### 3.5.1 Groundwater

The depth to unconfined groundwater aquifers in Travis AFB varies seasonally from approximately 12 to 30 feet below ground surface. Intensive extraction of groundwater does not occur at Travis because of poor water-bearing subsurface geology. Intensive extraction occurs west of Travis AFB and Fairfield, where the alluvium is thicker and contains a greater abundance of coarse-grained sediment. Groundwater wells in the area of Travis AFB are limited to domestic, stock-watering, and irrigation wells with typical screened depths within 100 feet of ground surface (CH2M HILL, 2001). Domestic wells, several of which are downgradient from Travis AFB, are typically used to provide water to households for domestic use (CH2M HILL, 2001). Solano County does not supply water to the residences surrounding Travis AFB. The two nearest domestic wells are within 1,700 feet of the south boundary of Travis AFB.

Onbase wells are not used for potable water production. However, several wells located 4 miles north of Travis AFB, at the Cypress Lakes Golf Course (Annex 10), produce 400 to 500 million gallons of water per year. The well water is mixed with surface water purchased from the City of Vallejo to supply potable water to Travis AFB. The Fairfield public water supply field is located approximately 3 miles west of Travis AFB. The large production wells at the golf course and in Fairfield tend to be deeper, as much as 1,000 feet below ground surface, than the nearby domestic wells (CH2M HILL, 2001).

The groundwater gradient beneath Travis AFB flows to the south and follows the regional trend. The horizontal hydraulic gradient range from 0.003 to 0.005 vertical foot per horizontal foot in the upper portion of the aquifer (URS, 2004). In the deeper portion of the aquifer, the hydraulic gradient ranges from 0.003 to 0.10 vertical foot per horizontal foot (Air Force, 1998).

### 3.5.2 Surface Water

Travis AFB is located in the northeastern portion of the Fairfield-Suisun Hydrologic Basin. Within this basin, water generally flows south to southeast toward Suisun Marsh, an 85,000-acre tidal marsh that is both the largest contiguous estuarine marsh and the largest wetland in the continental U.S. (CH2M HILL, 2001). Suisun Marsh drains into Grizzly and Suisun Bays. Water from these bays flows through the Carquinez Strait to San Pablo Bay and San Francisco Bay, and ultimately discharges into the Pacific Ocean near the City of San Francisco.

Travis AFB lies in the southern portion of the Union Creek watershed. The headwaters of Union Creek are located approximately 1 mile north of the Base, near the Vaca Mountains,

where the creek is an intermittent stream. Union Creek splits into two branches north of the Base. Onbase, the main (eastern) branch is impounded into a recreational pond designated as the Duck Pond. At the exit from the Duck Pond, the creek is routed through an underground storm drainage system to the southeastern Base boundary, where it empties into an open creek channel.

The west branch of Union Creek flows south and enters the northwestern border of the Base, east of the David Grant Medical Center, in an excavated channel. This channel flows south and parallels Ragsdale Street for approximately 4,000 feet. Flow in the channel is then directed to a culvert under the runway and discharges to the main channel of Union Creek at Outfall II. From Outfall II, Union Creek flows southwest and discharges into Hill Slough, a wetland located 1.6 miles from the Base boundary. Surface water from Hill Slough flows into Suisun Marsh.

Union Creek is the primary surface water pathway for runoff at Travis AFB. Stormwater runoff flows into the creek through a network of pipes, culverts, and open drainage ditches. Local drainage patterns have been substantially altered within the Base by the rerouting of Union Creek, the construction of the aircraft runway and apron, the installation of storm sewers and ditches, and general development like construction of buildings, roads and parking lots. The surface water collection system divides the Base into eight independent drainage areas. The eight drainage areas are shown on Figure 3-2. The eastern portion of the Base (Drainage Basin XE) is served by one of the drainage systems that collects runoff from along the runway and the inactive sewage treatment plant area and directs it to Denver Creek and Denver Slough. Denver Creek is an intermittent stream near the Base. The northwestern portion of the Base (Drainage Basin XW) drains to the west toward the McCoy Creek drainage area. McCoy Creek is also an intermittent stream near the Base. The remaining six drainage areas at the Base empty into Union Creek (CH2M HILL, 2001).

### 3.5.3 Floodplains

The two branches of Union Creek (see Section 3.5.2) are located within the 100-year floodplain. The western branch of Union Creek, located within the floodplain, is 15,000 feet long; its depth varies from 4 to 15 feet, and its width ranges from 15 to 25 feet. The total area encompassed by the western branch of Union Creek is 8.6 acres (Travis AFB, 2003a).

Approximately 25 acres of the eastern branch of Union Creek are in the floodplain (Travis AFB, 2003a). This area includes the Duck Pond and associated riparian regions. The remaining acreage consists of 17,000 feet of Union Creek. The width of the creek along this stretch ranges from 10 to 15 feet and its depth varies from 4 to 15 feet.

Approximately 38 percent of Travis AFB consists of impervious areas. To prevent flooding, runoff from these impervious areas enters the stormwater drainage system. The Base's stormwater drainage system is designed to accommodate a 10-year, 24-hour storm (Travis AFB, 2003a).

### 3.5.4 Wastewater

Industrial and sanitary wastewater produced from all lavatories, showers, and janitorial sinks in all buildings and from housing units are discharged to the sanitary sewer system.

The system consists of over 41 miles of steel, asbestos, concrete, and plastic gravity sewers and force mains ranging in size from 4 to 21 inches, and ten pump stations. Sewage flows to the Fairfield-Suisun Sewer District sewage treatment facilities via a main adjacent to the south gate. The contract between the Base and the Fairfield-Suisun Sewer District is based on an average daily flow of 1.6875 million gallons per day. In 2001, the average daily flow from the Base was approximately 1.6 million gallons per day in fiscal year 2001, with a peak recorded flow of 2.24 million gallons per day. The Base uses a sewage overflow facility that consists of five basins with a combined capacity of 18.2 million gallons. Sanitary and de minimis industrial wastes are discharged from the Fairfield-Suisun Sewer District under permit number 433-02 (Travis AFB, 2002a).

Because much of the system was installed more than 40 years ago, approximately 6,800 feet of sewers are overloaded during a 5-year storm event. The overall condition of the sanitary sewer system is degraded, due to the deteriorated condition of the piping system and the severe occurrence of infiltration and inflow. The Base is currently in the process of determining the scope and timing of repair projects for the system. According to the Travis AFB General Plan, the system will not be considered adequate to meet future conditions until significant improvement projects have been completed (Travis AFB, 2002a).

## 3.6 Biological Resources

### 3.6.1 Areas Subject to Regulation under Sections 404 and 401 of the Clean Water Act

#### 3.6.1.1 Overview

The U.S. Army Corps of Engineers (USACE) regulates discharge of dredge and fill material into waters of the U.S. (including wetlands) under Section 404 of the CWA. Waters of the U.S. are defined as all navigable waters, including the following:

- All tidal waters
- All interstate waters and wetlands
- All other waters such as lakes, rivers, streams (perennial or intermittent), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; the use, degradation, or destruction of which could affect interstate commerce
- All impoundments of water mentioned above
- All tributaries to waters mentioned above
- Territorial seas
- All wetlands adjacent to waters mentioned above

Waste treatment systems, including treatment ponds, are not waters of the U. S. (33 CFR Section 328.3).

Wetlands are areas that “are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (USACE, 1987). Any actions that involve the placement of fill material into jurisdictional waters and wetlands must comply with Sections 404 and 401 of the CWA.

The limits of wetlands are determined through implementation of the USACE’s three-parameter test, according to the protocols outlined in 1987 by the USACE, that examines soils, wetlands, and hydrology. The limit of jurisdictional waters of the U.S. (including wetlands) in nontidal waters extends to the ordinary high water line, to adjacent wetlands above the ordinary high water line, or, if not adjacent, to the limit of the wetland. The ordinary high water line is defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics such as a natural line impressed on the bank, shelving, scouring, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter or debris, or other appropriate evidence (33 CFR Section 328.4).

The term adjacent means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by constructed dikes or barriers, natural river berms, beach dunes and the like are adjacent wetlands. When waters of the U.S. consist only of wetlands, the jurisdiction extends to the limits of the wetlands (33 CFR Section 328.3(c)).

Wetland surveys were conducted in the vicinity of the Proposed Action area, but have not been delineated to occur within the boundary of the Proposed Action. However, one wetland has been delineated west of the Proposed Action site (see Figure 3-1).

### 3.6.1.2 Recent Changes in U.S. Army Corps of Engineers Jurisdiction

Since the recent Supreme Court ruling in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, USACE has been determining the scope of its jurisdiction over isolated wetlands under the CWA. This ruling found that the Migratory Bird Rule, used to bring isolated wetlands into jurisdiction based on a link to interstate commerce, is not fairly supported by the CWA, and that USACE cannot solely rely upon this rule as the basis for jurisdiction. The Supreme Court found that on this basis, regulation of isolated, intrastate, and non-navigable waters was outside the authority of the CWA.

In addition to the Migratory Bird Act, other connections with interstate commerce might support the assertion of CWA jurisdiction. Jurisdiction might also be possible if the use, degradation, or destruction of the wetlands could affect other Waters of the U.S.

Additionally, the Supreme Court affirmed that isolated wetlands determined to be adjacent to navigable waters are still subject to USACE jurisdiction. As described in *United States v. Riverside Bayview Homes*, the USACE’s jurisdiction over navigable waters extends to tributaries to navigable waters, upstream to the highest reaches of the tributary system, and all wetlands adjacent to any and all of those waters.

### 3.6.1.3 Riparian Habitat

Riparian vegetation grows along the shores of freshwater creeks, rivers, and lakes. Riparian wetlands at Travis AFB are limited to the banks of Union Creek. The most extensive riparian wetland is located along the northern portion of the eastern branch of Union Creek, upstream of the Duck Pond (Travis AFB, 2003a). Although willows and coyote brush can be

found along Union Creek, the dominant plant species found in the riparian zone of Union Creek are mainly herbaceous and consist of beardless wild rye (*Leymus triticoides*), Harding grass (*Phalaris aquatica*), and saltgrass. A noxious weed species, broad-leaved pepperweed (*Lepidium latifolium*), also occurs in this habitat type. Hydrophytes, such as cattails and rushes, are also commonly found at the toe of the creek slope, at the transition between riparian habitat and emergent marsh (CH2M HILL, 2001).

#### 3.6.1.4 Vernal Pools

Vernal pools are shallow depressions or small, shallow pools that fill with water during the winter rainy season, then dry out during the spring and become completely dry during the summer. Most vernal pools at Travis AFB are northern claypan vernal pools that occur on deep alluvial soils. Vernal pools have developed an ecologically unique flora that has evolved to tolerate the extreme wetting and drying cycles. Vernal swales, which are ecologically and floristically similar to vernal pools, also occur at Travis AFB. Vernal swales consist of drainways or poorly defined depressions that are inundated seasonally, but hold standing water for relatively short periods (Travis AFB, 2003a).

During the time that the vernal wetlands contain water, biotic communities develop over relatively restricted areas. A federally listed species, the vernal pool fairy shrimp (*Branchinecta lynchi*), inhabits some of the vernal pools (Travis AFB, 2003a). Overall, 110 species of plants have been historically identified in vernal wetlands at the Base, including three species – alkali milkvetch (*Astragalus tener* var. *tener*), Contra Costa goldfields (*Lasthenia conjugens*), and the San Joaquin spearscale (*Atriplex joaquiniana*) – that are considered special status species by the California Native Plant Society. Brittscale (*Atriplex depressa*) has also been observed at Travis AFB. Contra Costa goldfields is listed as federally endangered. Vernal pools are found throughout the Base. These sites vary in size from 1 acre to less than 50 ft<sup>2</sup>, and can be a single pool or swale, or a large, hydrologically associated pool cluster (Travis AFB, 2003a). The vernal wetlands are concentrated along the western, southern, and southeastern boundaries of the Base. The highest quality, intact vernal pools are located on the northwestern portion of the Base. The wetland located west of the Proposed Action area is a vernal pool.

### 3.6.2 Special-status Species

Special-status species consist of species that are listed by the U.S. Fish and Wildlife Service or the California Department of Fish and Game (CDFG) as rare, threatened, or endangered and plant species listed by the California Native Plant Society. Table 3-3 lists special-status species potentially occurring at Travis AFB. The information for this section was taken from the Travis AFB Integrated Natural Resources Management Plan (Travis AFB, 2003a), the Travis AFB General Plan (Travis AFB, 2002a), CDFG's California Natural Diversity Database (CDFG, 2004), and the California Native Plant Society Inventory (California Native Plant Society, 2001).

TABLE 3-3

Special-status Species Potentially Occurring at Travis Air Force Base

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Species Common Name	Species Scientific Name	Protection Status	Presence
<b>Plants</b>			
Contra Costa goldfields	<i>Lasthenia conjugens</i>	FE	K
Crampton's tuctoria	<i>Tuctoria mucronata</i>	FE/SE	P
Showy Indian clover	<i>Trifolium amoenum</i>	FE	P
Colusa grass	<i>Neostapfia colusana</i>	FT/SE	P
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	SE	P
<b>Animals</b>			
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	K
California tiger salamander	<i>Ambystoma californiense</i>	FT	K
California red-legged frog	<i>Rana aurora draytonii</i>	FT	P
Giant garter snake	<i>Thamnophis couchi gigas</i>	FT/ST	P
Delta green ground beetle	<i>Elaphrus viridis</i>	FT	P
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	P
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	FE	K
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	FE	P

Sources: Travis AFB, 2003a; CDFG, 2004

Notes:

FE = Federal Endangered

FT = Federal Threatened

SE = State Endangered

ST = State Threatened

K = Known to occur at Travis AFB

P = Potential to occur at Travis AFB

The western burrowing owl (*Athene cunicularia hypugea*) was identified on the western portion of the base in 1999 surveys (Travis AFB, 2003). A burrowing owl site was identified at the Proposed Action site in 2005 (B. Holmes, 2005, pers. comm.). The location of the burrowing owl site is illustrated on Figure 3-1. The burrowing owl was listed as a Species of Special Concern by CDFG in 1979, designated as a Federal Species of Special Concern in 1994, and a formal petition was made to the California Fish and Game Commission to list the species as either state threatened or endangered in 2003, but the commission formally rejected the petition on December 4, 2003 (LSA Associates, Inc., 2004). Burrowing owls nest underground in burrows dug by other burrowing species. They are usually monogamous during a nesting season and produce one clutch per year, laying from 2 to 11 eggs. Burrowing owls lay their eggs between March and May and might produce a second clutch if their first clutch is lost. The incubation period lasts approximately 26 to 29 days. The nestlings remain in the burrow for approximately 3 weeks after hatching. On average, two to four nestlings survive long enough to fledge, which occurs approximately 1 month after emergence from their burrow. Fledglings remain with their parents at least until fall and sometimes through the winter (LSA Associates, Inc., 2004).

### 3.6.2.1 Federally Listed Species

Various basewide studies conducted between 1994 and 2004 have identified four federally listed species at Travis AFB and eight others that have the potential to occur. These species are associated with wetland habitats, and are present at many locations across the Base, but

are absent from the Proposed Action site. The following federally listed species have been identified at Travis AFB:

- Contra Costa goldfields (*Lasthenia conjugens*), a federally endangered plant species
- Vernal pool fairy shrimp (*Branchinecta lynchi*), a federally threatened invertebrate species
- Vernal pool tadpole shrimp (*Lepidurus packardii*), a federally endangered crustacean species
- California tiger salamander (*Ambystoma californiense*), a federally threatened amphibian species (CDFG, 2004)

In a 1999 study, Contra Costa goldfields (*Lasthenia conjugens*) were identified in the northwest part of the Base and at the southwest end of the main runway. The vernal pool fairy shrimp (*Branchinecta lynchi*) has been identified in several studies and is likely to be present in many of the vernal pools within the Base. A dead California tiger salamander (*Ambystoma californiense*) was found on the site of the Castle Heights housing area prior to construction (Travis AFB, 2002a).

Although no other federally listed threatened or endangered species are known to be present at the Base (Travis AFB, 2002a), the following eight (Travis AFB, 2003a) species have the potential to occur onbase because suitable habitat is present:

- Crampton's tuctoria (*Tuctoria mucronata*), a federally endangered plant species
- Showy Indian clover (*Trifolium amoenum*), a federally endangered plant species
- Colusa grass (*Neostapfia colusana*), a federally threatened plant species
- California red-legged frog (*Rana aurora draytonii*), a federally threatened amphibian species
- Giant garter snake (*Thamnophis couchi gigas*), a federally threatened reptile species
- Delta green ground beetle (*Elaphrus viridis*), a federally threatened insect species
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), a federally threatened insect species
- Conservancy fairy shrimp (*Branchinecta conservatio*), a federally endangered crustacean species

### 3.6.2.2 State-listed Species

The Swainson's hawk (*Buteo swainsoni*) is known to nest onbase, and suitable habitat can be found in the annual grasslands scattered across the Base and the riparian habitat of Union Creek in the southern part of the Base (Travis AFB, 2002a). The following four species have the potential to occur at Travis AFB because suitable habitat is present:

- Boggs lake hedge-hyssop (*Gratiola heterosepala*), a state-listed endangered plant species
- Crampton's tuctoria (*Tuctoria mucronata*), a state-listed endangered plant species
- Colusa grass (*Neostapfia colusana*), a state-listed endangered plant species
- Giant garter snake (*Thamnophis couchi gigas*), a state-listed threatened reptile species

## 3.7 Socioeconomic Resources

Socioeconomic resources include the population, income, employment, and housing conditions of a community or region of influence. Socioeconomic conditions could be affected by changes in the rate of population growth, the demographic characteristics of a community, or employment within the region of influence caused by the implementation of the Proposed Action or the alternatives.

The total population of Solano County is approximately 412,000 (U.S. Census Bureau, (<http://quickfacts.census.gov/qfd/states/06/06095.html>)). Travis AFB is the largest employer in Solano County, employing more than 14,000 people, including 3,494 civilians. It provides approximately 10 percent of the total local employment and has an annual payroll of \$451 million. The Base adds an annual value of \$176 million to the community by creating an estimated 5,300 indirect jobs. Travis AFB workers participate in numerous group and charity projects and contribute more than \$333,000 annually to charitable organizations. The Base's overall impact on the county and surrounding area is estimated to be in excess of \$790 million (Travis AFB, 2002a).

The Base is located in a rapidly growing part of the San Francisco Bay Area. Solano County grew at a rate 50 percent higher than the Bay Area as a whole between 1990 and 2000. During the same period, the City of Fairfield grew at twice the overall rate. This accelerated rate of growth is expected to continue, and more than 80,000 additional residents are expected to migrate to Solano County by 2010. The local communities are creating development patterns that are compatible with the Base and its mission through their local plans and ordinances (Travis AFB, 2002a).

Approximately 14 percent of the military personnel who live offbase reside in Vacaville, and another 6 percent reside within the City of Fairfield. More than 8,700 military personnel retire to the area surrounding Travis AFB (Travis AFB, 2003c).

## 3.8 Cultural Resources

### 3.8.1 Cultural History

The region in which Travis AFB is located was once inhabited by the Southern Patwin (or Wintuan) tribe of Native Americans. The early inhabitants of the region established tribelets (i.e., villages) adjacent to freshwater marshes and hunted, gathered, and fished for subsistence. The primary tribelets in a region were the Suisun and Talenas. Spanish missionaries arrived circa A.D. 1750 to find a proto-agriculture culture existing in the region (Travis AFB, 2003b). The Southern Patwin were adversely affected by mission activities, disease, and disruption by gold miners, who eventually became settlers, and had largely abandoned the area prior to epidemics of malaria and smallpox in 1833 and 1837. Descendants of the Southern Patwin currently reside in the northern part of their former range in the Sacramento Valley (URS, 2004).

The area surrounding Travis AFB is cultivated for agricultural products and grazing livestock. These activities were first performed during the Spanish Mission Period and later by Mexicans and European Americans during the Mexican Period and early American

Period. The Spanish ruled the region from 1750 until the Mexican government took control in 1830. American rule replaced Mexican rule beginning in the 1840s (Travis AFB, 2003b).

The land currently occupied by Travis AFB was initially known as “poor man’s acres” and was not considered prime farmland. The first known settler, a farmer named Brinkerhoff, arrived in the 1850s. The Base site was historically used for ranching and limited irrigated farming (Travis AFB, 2003b).

Travis AFB was originally created as a temporary bomber base in 1942. The location was quickly recognized as an excellent air transport facility and was commissioned as the Fairfield-Suisun Army Air Base in 1943. In 1950, the Base was renamed after a former commander of the 9<sup>th</sup> Heavy Bombardment Wing, Brigadier General Robert Falligant Travis. Today, Travis AFB is known as “The Gateway to the Pacific,” and is among the largest and busiest military air terminals in the U.S.

### 3.8.2 Cultural Resource Investigations and Resources

Since 1909, 19 cultural resource studies have been conducted at Travis AFB or in the surrounding area. These studies identified 10 archeological sites and 27 buildings and structures on Base property that were potentially significant. Three of the 10 archeological sites were considered potentially prehistoric and the remaining 7 were considered potentially historic. All 10 sites were evaluated for eligibility for the National Register of Historic Places and were deemed not eligible. Twenty-seven buildings and structures associated with the Cold War are potentially eligible for inclusion on the National Register of Historic Places, and are the only known cultural resources at Travis AFB (Travis AFB, 2003b). Of the 27 potentially historic buildings, 19 are located near the Proposed Action. The 19 potentially historic buildings, their original uses, and the year each was built are listed in Table 3-4. Figure 3-1 shows the location of the potentially historic buildings in relation to the Proposed Action.

## 3.9 Land Use

Travis AFB occupies approximately 5,128 acres of land near the center of Solano County, California (Travis AFB, 2002a). The Base is located less than 5 miles east of downtown Fairfield and approximately 8 miles south of downtown Vacaville (see Figure 1-1). Solano County’s population in 2000 was 394,542 (U.S. Census Bureau, 2000). This population grew to approximately 412,000 by 2003 (<http://quickfacts.census.gov/qfd/states/06/06095.html>). From 1980 to 1990, the population of Solano County increased nearly 45 percent; however, the rate of growth declined from 1990 to 2000 (16 percent) (U.S. Census Bureau, 2000) and from 2000 to 2003 (4.5 percent, estimated).

TABLE 3-4

Potentially Historic Buildings near the Proposed Action at Travis Air Force Base

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Building Number	Original Use	Year Built
902	Base Spares Office	1951-53
903	Storage, C Structure	1951-53
904	Base Spares Warehouse #1	1951-53
905	Base Spares Warehouse #2	1951-53
906	Base Spares Warehouse	1951-53
908	Supply and Issue Shop	1953-54
909	Special Weapons Readiness Crew Facility	1956-57
912	Base Communications Office	1956-57
915	Hazardous Substances Warehouse	1956-57
916	Emergency Electrical Power Plant	1951-53
930	Readiness Crew and Operations Facility	1951-53
931	Heavy Equipment Shop	1951-53
932	Surveillance and Inspection Shop	1951-53
934	Surveillance and Inspection Shop	1951-53
936	Surveillance and Inspection Shop	1951-53
938	Base Spares Warehouse	1958-59
940	Paint Shop	1959-60
943	Surveillance and Inspection Shop	1955-56
944	Base Spares Warehouse	1958-59

Source: Travis AFB, 2003b

### 3.9.1 Land Use Categories

The land use areas of Travis AFB are grouped into 12 functional categories, as follows:

- **Airfield** – Uses consist of pavement system, related open space, navigational aids, and airfield and airway clearance surfaces.
- **Aircraft Operations and Maintenance** – Uses include aircraft operations, aircraft maintenance, aircrew and maintainer training facilities and passenger and freight terminal facilities.
- **Industrial** – Uses include fire stations, base supply and equipment complex, fuel facilities, vehicle maintenance, civil engineer complex, open storage, utilities infrastructure, emergency response, ordinance and weapons storage and other industrial uses.
- **Administrative** – Uses include personnel, family services, police and security, wing/group headquarters, legal services, communications, gate and visitor management, and other support facilities.
- **Community (Commercial)** – Uses include the exchange, commissary, banking, dining facilities, eating establishments, indoor recreation facilities and service stations. Supports the needs of personnel and their families.

- **Community (Service)** – Uses include schools, education centers, library, chapel, post office, and child development facilities. Supports the needs of personnel and families.
- **Medical** – Uses include medical, dental, and Veterans Administration clinics, veterinary clinics, and bioenvironmental engineering facilities.
- **Housing (Accompanied)** – Uses include family housing, mobile home parks and temporary lodging facilities.
- **Housing (Unaccompanied)** – Uses include dormitories for bachelors and quarters for visiting personnel.
- **Outdoor Recreation** – Uses include activities such as golf and swimming, park and picnic facilities, and recreation equipment checkout and storage.
- **Open Space** – Uses include conservation and preservation areas, safety, security and buffer zones, including spaces that are unsuitable for development.
- **Water** – Uses include open space and outdoor recreation activities, and also buffer space between incompatible uses. In the form of ponds, streams, lakes, shorefronts and oceans.

### 3.9.2 Land Use Restrictions

Land use restrictions and controls are established as buffers surrounding certain facilities to protect human health from potential adverse effects. For example, protective buffer zones are designated around the munitions storage areas in the event of accidental explosions. In some parts of the base land use controls (LUC) are formally in place to protect human or environmental health from contaminated soils or water. The LUC near both of the alternatives is associated with ERP site SD043. Neither the No Action Alternative nor the Proposed Action would have an impact on SD043.

Travis AFB has established explosive safety quantity-distance zones (Q/D arcs) to protect onbase military and civilian population from hazards associated with the handling and/or storage of explosives. The radii of the Q/D arcs range from 1,250 to 2,100 feet. These zones ensure that any area where explosives are stored or handled (e.g., the munitions storage area) are separated from the following:

- Other areas containing explosives or propellants
- Petroleum, oil, and lubricant storage
- Inhabited buildings and facilities not related to explosives operations
- Aircraft parking, storage, and operation areas

### 3.9.3 Land Use Surrounding Travis Air Force Base

The lands surrounding Travis AFB on the northeast and east are primarily used for ranching and grazing. Areas to the south are a combination of agricultural and marshland. A few commercial/light industrial areas are present to the north of the Base. The area west of Travis AFB is predominantly residential. Neither of the project alternatives would have an impact on the land use surrounding the Base.

## 3.10 Transportation System

The following section describes the components of the transportation system in place at Travis AFB. Information regarding the transportation system has been summarized from the Travis AFB General Plan (Travis AFB, 2002a).

### 3.10.1 Roadways/Streets

The roadway network serving Travis AFB consists of several major thoroughfares, including: Travis Avenue, Ragsdale Street/Cannon Drive, Burgan Boulevard, Parker Road, Hickam Avenue, and Hangar Avenue. Ragsdale Street is a two- to four-lane road oriented in a north-south direction. Ragsdale Street is centrally located, and therefore serves much of the traffic to and from the flightlines and freight-handling areas. Minor streets, branching off from these main roadways are Skymaster Drive, Broadway Street, and 1st Street, which serve as collector facilities for the Base. The Travis AFB General Plan (Travis, 2002a) does not identify traffic issues associated with the main thoroughfares, and major traffic improvement projects are not planned.

### 3.10.2 Other Facilities

Other facilities within Travis AFB's transportation system include the following:

- **Parking.** Parking facilities are generally associated with each building at the Base. Two areas have been identified as having either insufficient parking capacity or design flaws – the parking area that serves the Child Development Center, the mini-mall, and the Credit Union; and the parking area serving Erwin Hall.
- **Sidewalks.** Pedestrian walkways are provided in most industrial and residential areas, as well as along major roadways. There are also pedestrian walkways around the Duck Pond, located in the northeastern portion of the Base, and through the greenbelt that extends from just south of North Gate Park at Burgan Boulevard to Cannon Drive.
- **Bicycle Paths.** To keep bicycle paths separate from roadways, many facilities are shared with pedestrians. New paths are being constructed along Burgan Boulevard, Broadway Street, Hickam Avenue, and Hangar Avenue.
- **Mass Transit.** Travis AFB's "Blue Bus System" provides transportation around commercial centers as well as to and from the flightline. This system is only intended for transportation associated with work-related activities.
- **Passenger/Cargo Terminal.** The terminal is located at the south end of Burgan Boulevard and is accessed via a passenger-loading zone in front of the terminal. The terminal is scheduled to be upgraded, including improvements of the circulation system.
- **Railheads.** One rail spur connects the Base with the Union Pacific Railroad. The spur enters the Base on the east (near the Flying Club runway) and ends near Building 572. An inactive wye track is located in the tank farm area.

## 3.11 Airspace/Airfield Operations

Airfield operations refer to any takeoff or landing at an air base. The activity may be either part of a training maneuver or defense-related operations. In fiscal year 2003, the air crews at Travis AFB flew more than 68,000 hours, hauling 300 million pounds of cargo and 93,000 passengers (Travis AFB, 2003c). Daily operations are conducted by several units stationed at the Base. These units are described below.

### 3.11.1 Airfield Safety

Travis AFB has established several clearance zones, in accordance with Unified Facilities Criterion 3-260-01. Clearance zones are imaginary surfaces developed to promote safe operations in the airfield vicinity, and include the following:

- **Primary Surface.** This area extends 200 feet beyond each end of the runway and 1,000 feet on both sides of the runway centerline.
- **Clear Zone.** This zone extends 3,000 feet from the end of the runway and 1,500 feet on either side of the runway centerline.
- **Accident Potential Zones I and II.** Accident Potential Zone I extends 5,000 feet from the clear zone; Accident Potential Zone II extends an additional 7,000 feet from the edge of Accident Potential Zone I.
- **Approach/Departure Clearance Surface.** This surface was established to ensure safe landing/takeoff of aircraft at Travis AFB. The inclined plane, which is 2,000 feet wide at one end of the runway and 16,000 feet wide at the opposite end, extends 50,000 feet outward from the runway, at a slope of 50:1 along the runway centerline, to an elevation of 500 feet above ground surface. Activities are limited in this area to ensure safe aircraft operation. Restricted activities include: those that penetrate the clearance surface; those that would release substances into the atmosphere which could reduce visibility or impair the pilot's vision (smoke, dust, light emissions); those that produce emissions which could impact aircraft operation (communication or navigational equipment); and those which could attract birds.
- **Transitional Imaginary Surface.** The transitional surface is an inclined plane extending outward and upward, beginning at 1,000 feet from the runway centerline, at right angles to the centerline at a slope of 7:1.
- **Taxiway Clearance Line.** This zone extends 200 feet from the taxiway centerline. There are to be no obstacles, fixed or mobile, within this zone.

The Proposed Action is not located in an airspace or airfield operations area. UFC 3-260-01 states that, to meet specific airspace/airfield operations criteria, construction must be more than 1,000 feet from the runway centerline, and constructed structures should be under a 7:1 ratio from the 1,000-foot line. Air Force Instruction 32-7084 lists the compatibility of various land uses with the different types of zones surrounding the airfield.

### 3.11.2 60<sup>th</sup> Air Mobility Wing

The 60<sup>th</sup> Air Mobility Wing is the host unit at Travis AFB, and operates the C-5 Galaxy cargo aircraft (21<sup>st</sup> and 22<sup>nd</sup> Airlift Squadrons) and the KC-10 Extender refueling aircraft (6<sup>th</sup> and 9<sup>th</sup> Airlift Squadrons) (Travis AFB, 2002a). The mission of this strategic unit is “to provide quality services and support for America’s Global Reach through a responsive and flexible combat-ready air mobility force.” The unit is capable of providing cargo, passenger, and patient airlift (including troop and equipment deployment and humanitarian support) in addition to aerial refueling. The unit is divided into four groups, as follows:

- 60<sup>th</sup> Maintenance Group
- 60<sup>th</sup> Medical Group
- 60<sup>th</sup> Operations Group
- 60<sup>th</sup> Mission Support Group

### 3.11.3 Tenant Units

The 349<sup>th</sup>, a reserve unit, is the primary tenant unit at Travis AFB, and also operates the C-5 Galaxy cargo aircraft and the KC-10 Extender refueling aircraft (Travis AFB, 2002a).

Other tenant units include the following:

- The U.S. Army Reserve Division, 3<sup>rd</sup> Brigade, 91<sup>st</sup> Division
- The Air Mobility Command Band of the Golden West
- The Area Defense Counsel
- The 15<sup>th</sup> Expeditionary Mobility Task Force
- The 615<sup>th</sup> AMOG, including the 715<sup>th</sup> and 815<sup>th</sup> Air Mobility Operations Squadrons
- The U.S. Navy Fleet Air Reconnaissance Squadron THREE Detachment, Travis (flying the E-6A Mercury)
- The Air Force Auxiliary Civil Air Patrol, Travis Composite Squadron 22
- The 373<sup>rd</sup> Training Squadron, Training Detachment 14 (Air Education and Training Command)

Travis also provides support elements to three regional Air Force ROTC units, as follows:

- Detachment 85, University of California at Berkeley
- Detachment 045, San Jose State University, California
- Detachment 88, California State University, Sacramento

## 3.12 Safety and Occupational Health

Safety and occupational health is managed by BioEnvironmental.

Construction site safety and accident prevention are ongoing activities for any Air Force job site. As part of the contracts for construction services, standard terms and conditions include safety as a priority. Areas of concern include compliance with regulations typical

to construction projects, such as confined-space regulations, handling of hazardous materials, minimum personal protection equipment standards, and limited access to the construction area.

### 3.13 Environmental Management (Including Geology, Soils, and Pollution Prevention)

The following sections describe the regional geology of Travis AFB, soil types present, and Pollution Prevention Plans that are in place at the Base.

#### 3.13.1 Geology

Travis AFB is located on the western edge of the Sacramento Valley segment of the Great Valley Geomorphic Province. The Coast Range Geomorphic Province, which consists of folded and uplifted bedrock mountains, lies just to the west of Travis AFB (Thomasson et al., 1960; Olmsted and Davis, 1961).

The land surface structure (geomorphology) of Travis AFB is characterized by gently sloping alluvial plains and fans. These coalescing, low-relief fans were deposited by Ulati, Union, Alamo, Laurel, and Suisun Creeks. Most of the alluvial material was deposited prior to the last period of glaciation during the Pleistocene Epoch, and is referred to as Older Alluvium. During the last 15,000 years, as sea levels have risen, the drainages have refilled with alluvium. This material is referred to as Younger Alluvium. Some topographic relief in the form of very low ridges is provided by outcroppings of sedimentary rock in the Travis AFB area.

Figure 3-3 is a geologic map illustrating the distribution of shallow bedrock units and alluvium in the vicinity of Travis AFB. Bedrock at Travis AFB consists of consolidated to semi-consolidated sedimentary rock.

Uplift of the Coast Ranges and sedimentary deposition in adjacent basins continued throughout the Pleistocene Epoch, and formed the current Fairfield-Suisun Hydrologic Basin. Travis AFB is located on an alluvial fan that extends from the Vaca Mountains to Suisun Marsh. The alluvium in the vicinity of Travis AFB originated from the erosion of the elevated bedrock formations and subsequent deposition in various continental environments. Sediment eroded from the Vaca Mountains has been carried in several streams (e.g., Union Creek) which have migrated laterally across the Base.

At Travis AFB, the overall thickness of the alluvium ranges from 0 to approximately 70 feet, but is generally less than 50 feet. West of Travis AFB, the thickness of the alluvium increases to over 200 feet (Thomasson et al., 1960).

Past tectonic processes folded and uplifted the bedrock to form the hills and mountains located north, west, and south of Travis AFB. Outcrops of relatively resistant Markley Sandstone, Domingue Sandstone, and Tehama Formation form most of the topographic high points on base.

Travis AFB is located within the San Francisco Bay region, a region that is susceptible to frequent earthquake activity. The USGS concluded that there is a 70 percent probability of

at least one magnitude 6.7 or greater earthquake, capable of causing widespread damage, striking the San Francisco Bay region before 2030 (Travis AFB, 2002a).

The Vaca Fault system, shown on Figure 3-3, traverses the eastern portion of the Base. A potentially more devastating fault, the Green Valley Fault, is located 10 miles west of the Base. The other and more prominent fault zones in the San Francisco Bay region are the San Andreas, the Hayward, and the Calaveras Faults, which are located 20 miles or more from the Base (Travis AFB, 2002a).

### 3.13.2 Soils

Soil develops from geologic material exposed at the earth's surface as the material is altered through physical, chemical, and biological processes. The nature of soil is in part a function of climate, surface slope, time of exposure at the surface, and the type of original (parent) material. Soils in the vicinity of Travis AFB are classified as alfisols, which are primarily silt and clay loams that exhibit low permeabilities and poor drainage characteristics.

A soil map depicting the distribution of soil types for Travis AFB and vicinity is provided on Figure 3-4.

### 3.13.3 Pollution Prevention

Travis AFB has an active Pollution Prevention Program that strives to reduce the generation of wastes through a hierarchy of actions ranging from the preferred choice of source reduction to recycling, treatment, and finally disposal, as a last resort. The Pollution Prevention Management Action Plan defines the framework to accomplish these actions. The Pollution Prevention Management Action Plan analyzes all processes that use hazardous materials and generate hazardous waste streams, then evaluates options to reduce the volume and/or toxicity of generated wastes. This program includes minimizing wastes generated by ERP sampling activities.

## 3.14 Environmental Justice and Protection of Children

EO 12898 (1994) requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations." A minority population can be described as being composed of people who identify themselves to the U.S. Census Bureau as American Indian or Alaskan Native, Asian or Pacific Islander, Black or African American, or of Hispanic origin, and where such population exceeds 50 percent of the population in an area or where the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (CEQ, 1997).

Each year, the U.S. Census Bureau defines the national poverty thresholds, which are measured in terms of household income and the number of people within the household. Individuals falling below the poverty threshold (\$18,810 for a household of four in 2003) are considered low-income individuals (U.S. Census Bureau, 2004).

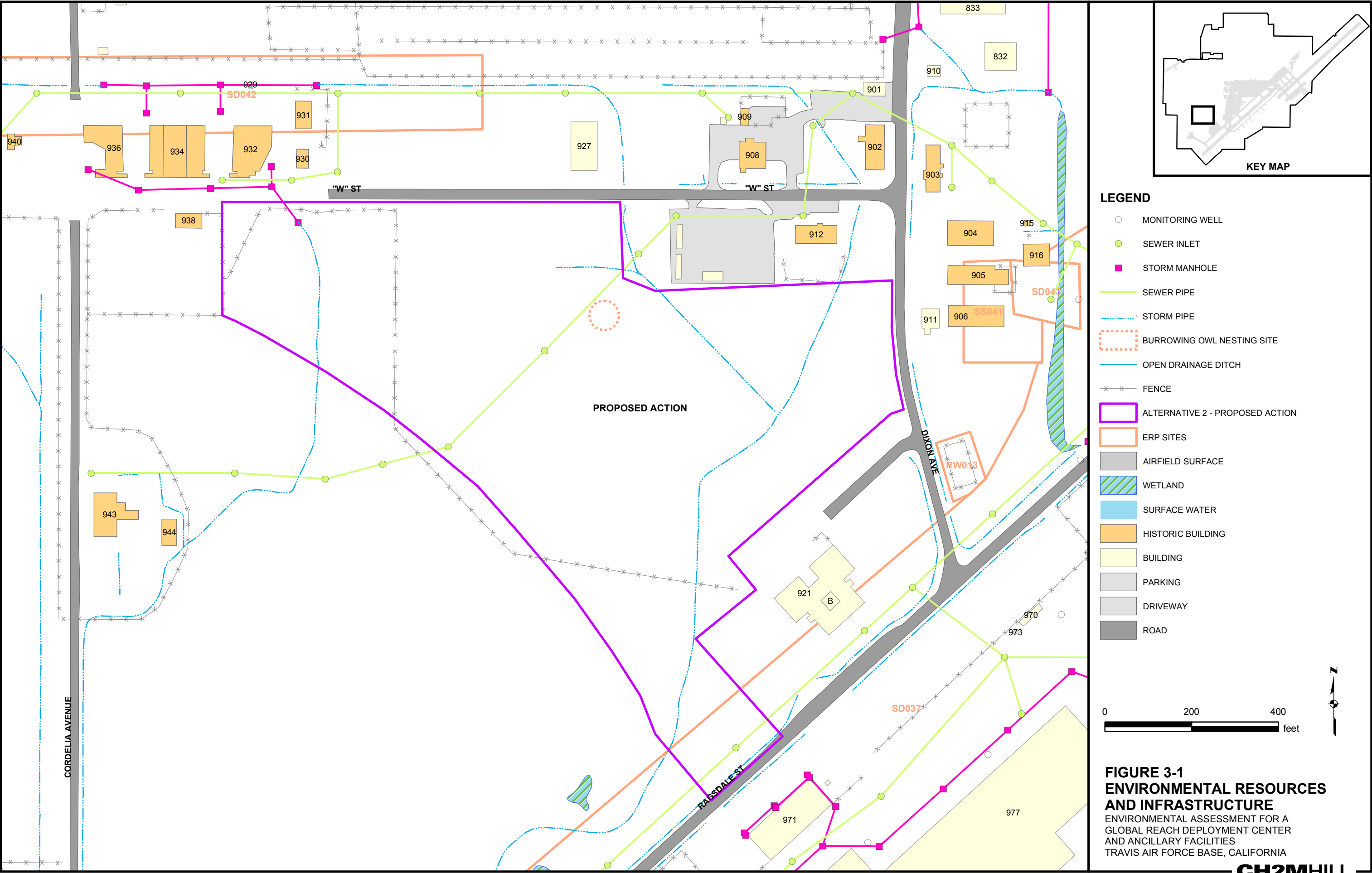
Solano is a large, demographically diverse county, with communities ranging from the urban areas of Vallejo and Fairfield in the southwest to small rural towns, such as Dixon and

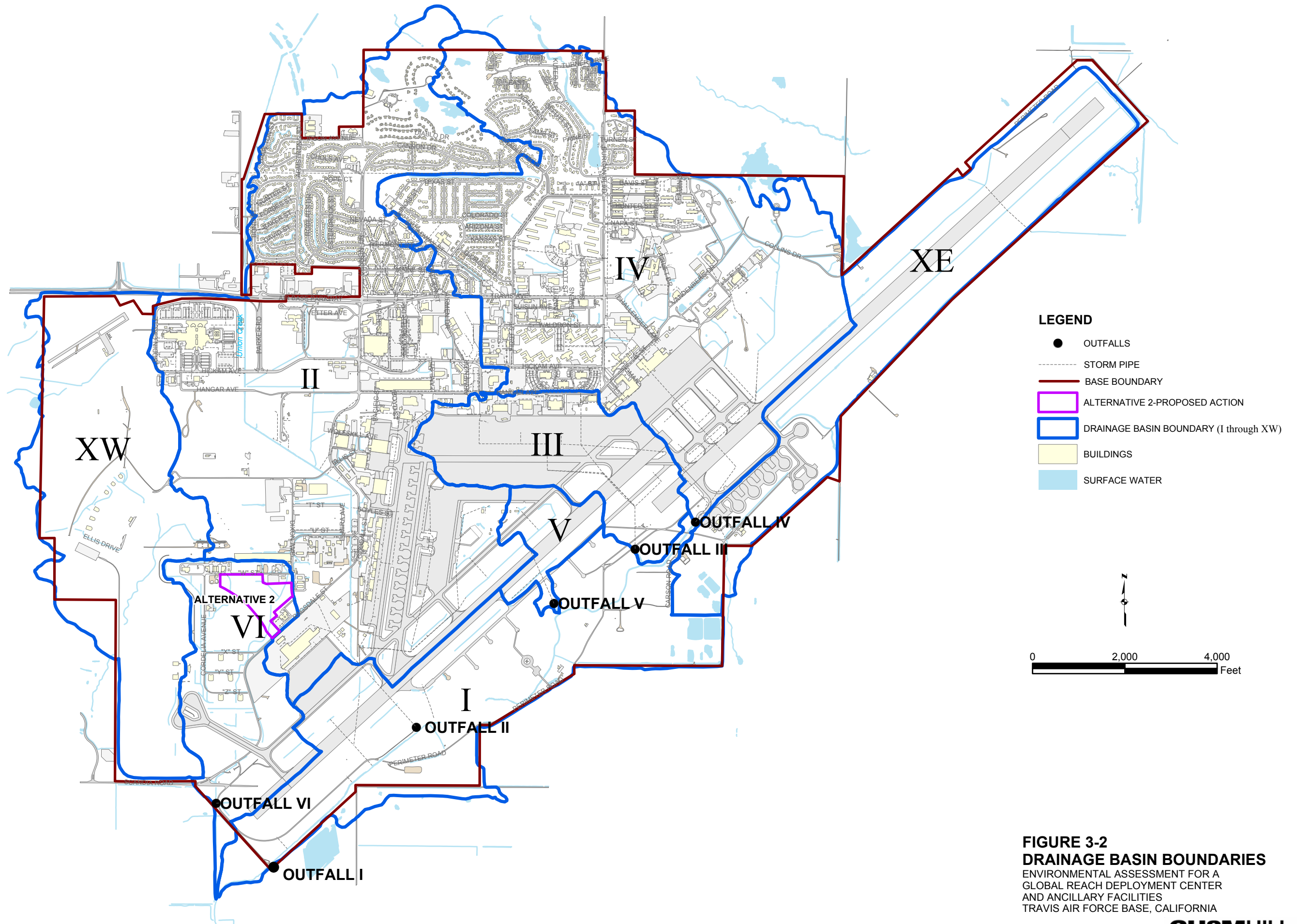
Rio Vista. The 2000 Census population of Solano County was 394,542, with 56.4 percent White (222,387 people) and 14.9 percent (58,827 people) described as African American; 17.6 percent of the county's population is considered Hispanic. The percentage of individuals in Solano County below the poverty level was 8.3 (31,344 people) (U.S. Census Bureau, 2000).

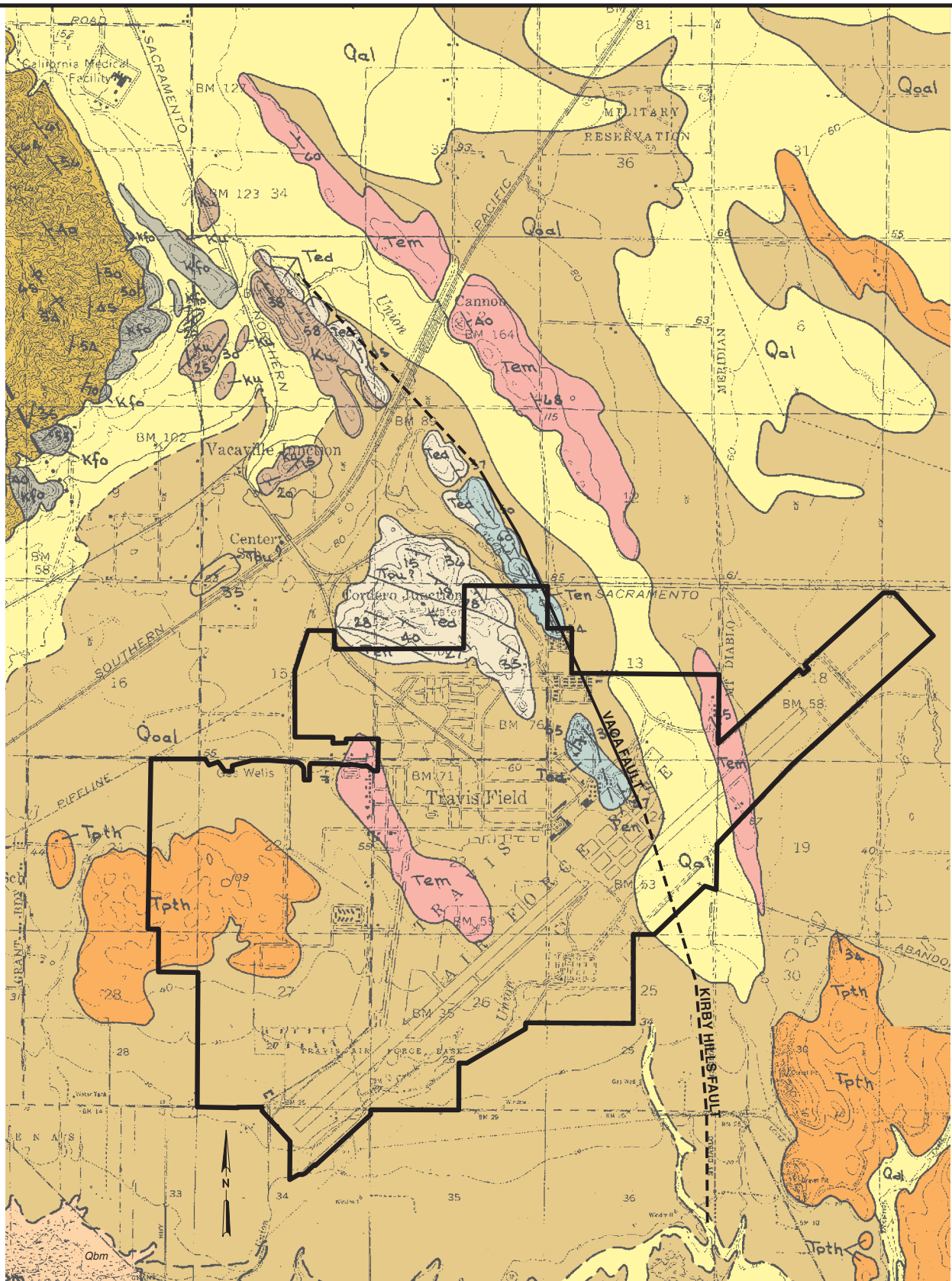
The City of Vallejo, the largest city in Solano County, has approximately 30 percent (116,760 people) of the county's population. Vallejo is more diverse than the county as a whole, with a population that is 36 percent White, 23.7 percent African American, and 15.9 percent Hispanic. Approximately 10 percent of individuals in Vallejo are at or below the poverty level. Fairfield is the second largest city (96,178 people) in the county and the closest city to Travis AFB. Fairfield more closely reflects the cultural composition of the county. The greater part of the population in Fairfield is White (54,063, or 56.2 percent), with lower percentages of Hispanic (18.8 percent; 18,050 people) and African American (15.0 percent; 14,446 people). Approximately 9.3 percent of individuals live at or below the poverty level (U.S. Census Bureau, 2000).

The resident population of the Base was 11,598 people in 2003 (Travis AFB, 2003c). Although demographic data for Travis AFB was not available, the racial composition of the Air Force serves as an approximation of the racial composition of the Base. In 2003, the Air Force was 75.2 percent White, 15.6 percent African American, and the remaining 9.2 percent was composed of other races (Air Force, 2003).

Children are present on Travis AFB in family housing, child development centers, the Travis AFB youth center, schools, and playgrounds (Travis AFB, 2004).







#### LEGEND

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| <span style="display: inline-block; width: 20px; height: 10px; background-color: yellow; border: 1px solid black;"></span> Qal-YOUNGER ALLUVIUM      | <span style="display: inline-block; width: 20px; height: 10px; background-color: lightblue; border: 1px solid black;"></span> Ten-NORTONVILLE SHALE     |
| <span style="display: inline-block; width: 20px; height: 10px; background-color: orange; border: 1px solid black;"></span> Qbm-BAY MUD               | <span style="display: inline-block; width: 20px; height: 10px; background-color: lightyellow; border: 1px solid black;"></span> Ted-DOMENGINE SANDSTONE |
| <span style="display: inline-block; width: 20px; height: 10px; background-color: brown; border: 1px solid black;"></span> Qoal-OLDER ALLUVIUM        | <span style="display: inline-block; width: 20px; height: 10px; background-color: lightbrown; border: 1px solid black;"></span> Tpu-UNNAMED FORMATION    |
| <span style="display: inline-block; width: 20px; height: 10px; background-color: darkorange; border: 1px solid black;"></span> Tpth-TEHAMA FORMATION | <span style="display: inline-block; width: 20px; height: 10px; background-color: darkbrown; border: 1px solid black;"></span> Kfo-FORBES FORMATION      |
| <span style="display: inline-block; width: 20px; height: 10px; background-color: pink; border: 1px solid black;"></span> Tem-MARKLEY SANDSTONE       | <span style="display: inline-block; width: 20px; height: 10px; background-color: yellow; border: 1px solid black;"></span> Kgu-GUINDA FORMATION         |

**FIGURE 3-3**  
**GEOLOGIC MAP OF**  
**TRAVIS AFB AND VICINITY**  
 ENVIRONMENTAL ASSESSMENT FOR A  
 GLOBAL REACH DEPLOYMENT CENTER  
 AND ANCILLARY FACILITIES  
 TRAVIS AIR FORCE BASE, CALIFORNIA



**FIGURE 3-4  
SOIL TYPES**  
ENVIRONMENTAL ASSESSMENT FOR A  
GLOBAL REACH DEPLOYMENT CENTER  
AND ANCILLARY FACILITIES  
TRAVIS AIR FORCE BASE, CALIFORNIA

SOURCE: TRAVIS AIR FORCE BASE GENERAL PLAN (TRAVIS AFB, 2002)

# Environmental Consequences

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## 4.1 Introduction

This section provides the regulatory background, as applicable, for the various environmental resource areas and evaluates potential impacts resulting from construction and operation of the proposed Center. The potential impacts to the human and natural environments were evaluated by comparing the Proposed Action to the No Action Alternative. The subsection for each environmental resource or issue assesses the anticipated direct and indirect impacts, considering both short- and long-term project effects.

The reorganization from AMOG to CRW is ongoing. The following assumptions have been made with regard to stationing the TDC and RAU at Travis AFB:

- Alternative 1: The location of the facilities to be made available for the TDC and RAU has not yet been identified. As stated in Section 2.4.1, however, it is assumed that they would be occupying existing buildings and new construction would not be required. The approach to the analysis accounts for the additional personnel to be stationed at Travis AFB and qualitatively addresses associated impacts.
- Alternative 2: The Proposed Action includes construction of facilities for the TDC and RAU. The schedule for construction of these later phases is to be determined. To provide a conservative analysis of potential impacts, it is generally assumed that the Center would be built in one phase. In instances where consideration of the various phases provides a more conservative or appropriate approach (e.g., in conducting the conformity analysis in Section 4.2, Air Quality), the method of evaluating impacts is explicitly noted.

As described in the following subsections, no significant adverse environmental impacts are anticipated for construction of the Center.

## 4.2 Air Quality

### 4.2.1 Laws and Regulations

#### 4.2.1.1 Federal

The U.S. Congress adopted the CAA in 1970, and its amendments in 1977 and 1990. The CAA and amendments are the body of federal laws that require the U.S. Environmental Protection Agency (EPA) and the states to regulate air pollution emissions from stationary and mobile sources to protect public health and welfare. Air quality regulations were first promulgated with the CAA, and revised with the CAA Amendment. They are published in 40 CFR Sections 50 through 97 and 1048 through 1068.

The CAA requires EPA to establish and maintain NAAQS, used to manage air quality across the country. Pollutants for which standards have been established are termed “criteria” pollutants, because the standards are based on criteria that show a relationship between pollutant concentrations and effects on health and welfare. From this relationship, EPA establishes acceptable pollutant concentrations to serve as ambient air quality standards. As mandated by the CAA, EPA has established maximum threshold standards for the following criteria pollutants: CO, PM<sub>10</sub> and PM<sub>2.5</sub>, ozone, nitrogen dioxide, SO<sub>2</sub>, and lead. Federal clean air laws require areas with unhealthy levels of ozone, CO, nitrogen dioxide, SO<sub>2</sub>, and inhalable particulate matter to develop plans, called State Implementation Plans (SIP), describing how they will attain NAAQS (see California, below).

Under the conformity provisions of the CAA Amendment, no federal agency can approve or undertake a federal action, or “project,” unless the project has been demonstrated to conform to the applicable SIP. These conformity provisions were put in place to ensure that federal agencies would contribute to efforts to attain the NAAQS. The EPA has issued two conformity guidelines: transportation conformity rules that apply to transportation plans and projects and general conformity rules that apply to all other federal actions. A conformity determination<sup>1</sup> is only required for the alternative that is ultimately selected and approved. The general conformity determination is submitted in the form of a written finding, issued after a minimum 30-day public comment period on the draft determination.

Applicable only in areas designated as nonattainment or maintenance for NAAQS, the general conformity rule prohibits any federal action that does not conform to the applicable air quality attainment plan or SIP. General conformity applicability analysis requires quantification of direct and indirect, construction, and operation emissions for the project, and comparison of these emission levels to baseline emission levels. If the differences in emissions (the net emissions associated with the Proposed Action) exceed the general conformity de minimis levels for the peak year or any milestone year for attainment of standards, additional general conformity determination is required.

An action is exempt from the conformity rule (presumed to conform) if the total net project-related emissions (construction and operation) pass two tests: they are less than the de minimis thresholds established by the conformity rule, and they are not regionally significant (emissions are regionally significant if they exceed 10 percent of the total regional emission inventory). An action that produces emissions that exceed conformity thresholds, or is regionally significant, is required to demonstrate conformity with the SIP through mitigation or other accepted practices.

The CAA also requires preconstruction review of facilities and equipment that could potentially emit air contaminants. Permitting depends on the size of the emission source and its location in an attainment or nonattainment area. The BAAQMD is the agency with permitting authority in western Solano County (see Bay Area Plans and Programs, below).

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<sup>1</sup>A conformity determination is a process that demonstrates how an action would conform to the applicable implementation plan. If the emissions cannot be reduced sufficiently, and if air dispersion modeling cannot demonstrate conformity, then either a plan for mitigating or a plan for offsetting the emissions would need to be pursued.

#### 4.2.1.2 California

The California Clean Air Act, approved in 1988, requires local air districts to develop and implement strategies to attain California's ambient air quality standards. CARB oversees California air quality policies. CAAQS were established in 1969 pursuant to the Mulford-Carrell Act. These standards are generally more stringent than the NAAQS, and limit four additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulates (see Table 3-1).

The SIPs required by federal law are not single documents; they are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, and permitting), district rules, state regulations, and federal controls. CARB is the lead agency for all purposes related to the SIP. Local air districts and other agencies, such as the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to EPA for approval and publication in the Federal Register.

#### 4.2.1.3 Bay Area Plans and Programs

As indicated previously, CARB is responsible for regulating air quality in California. BAAQMD implements standards and policies set forth by CARB. BAAQMD rules and regulations apply to all sources of emissions within the nine-county Bay Area region, including western Solano County. The Bay Area Air Quality Plan is a regional plan that addresses how the San Francisco Bay Area will attain NAAQS and CAAQS. The plans and regulations require that new and modified stationary emission sources must apply for air quality permits, and if applicable, implement control measures and install emission-control devices.

### 4.2.2 Alternative 1 – No Action

Under the No Action Alternative, construction would not occur and air pollutant emissions associated with construction would not be generated. Emissions from operations, including travel to the site, would not change from current conditions.

The number of personnel is anticipated to increase from current staffing levels by as many as 150 personnel for operation of the new facilities. The personal vehicles of the additional personnel driving to the site would generate additional vehicular air emissions, which would result in less than significant long-term adverse impacts to air quality.

### 4.2.3 Alternative 2 – Proposed Action

The Proposed Action would cause temporary, short-term adverse impacts to air quality as a result of construction emissions. Construction-related impacts are expected to be local (i.e., confined to the construction site area) and limited to the duration of the construction activities. Potential impacts are expected to be less than significant.

Long-term adverse impact would include the operation emissions from two new parts cleaners, space heating systems, and mobile sources emissions from the additional personnel traveling to the new facilities. Potential impacts are expected to be less than significant.

#### 4.2.3.1 Construction and Operation Emissions

**Construction Emissions.** The construction of the proposed Center would be conducted in three phases, as shown in Table 4-1.

TABLE 4-1

Alternative 2 Construction Schedule

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities,  
Travis Air Force Base, California*

Construction Phase	Square Footage of Building Construction	Construction Period	Months of Construction
I	196,585	Jan. 2006 – Mar. 2008	27
II	61,332	Jan. 2008 – Dec. 2010	36
III	26,362	Jan. 2011 – Jun. 2012	18

Construction emissions are expected to occur as a result of engine exhaust from added vehicles trips of construction workers and offroad construction equipment, including earth-moving equipment and trucks. These emissions would primarily consist of NO<sub>x</sub>, particulate matter, CO, and volatile organic compounds (VOC). Emissions of SO<sub>2</sub> from construction are not expected to be significant, because Travis AFB would use low-sulfur-content diesel fuel for the construction equipment.

The construction emissions of VOCs, NO<sub>x</sub>, CO, and PM<sub>10</sub> under the Proposed Action were calculated according to the methodology provided in Chapter 9 of the *CEQA Air Quality Handbook* (South Coast Air Quality Management District, 1993), because BAAQMD does not have specific emission factors for construction projects. Emission factors from Table 9-1, for industrial facilities, were used. These emission factors include onsite construction equipment and worker travel.

The estimated emissions for each year of construction are shown in Table 4-2. Detailed construction emission calculations are provided in Appendix C.

TABLE 4-2

Estimated Alternative 2 Emissions during Construction

*Environmental Assessment for Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Construction Year	Annual Emissions (tpy)			
	VOC	NO <sub>x</sub>	CO	PM <sub>10</sub>
2006 to 2007 (Phase I)	1.4	21.1	4.6	1.5
2008 (Phase I and Phase II)	0.7	10.2	2.2	0.7
2009 to 2010 (Phase II)	0.3	4.9	1.1	0.3
2011 (Phase III)	0.3	4.2	0.9	0.3
2012 (Phase III)	0.1	2.1	0.5	0.2

Note:

tpy = tons per year

**Operation Emissions.** Operation emissions from the Proposed Action would be generated by the two new parts cleaners, the heating systems, and the vehicles emissions from the additional personnel that would travel to Travis AFB after the AMOG center is constructed.

**Emissions from New Parts Cleaners.** The cleaning solvent to be used during the operation of the parts cleaners at the Center would generate VOC emissions. Travis AFB currently operates 10 parts cleaners, with average VOC emissions of approximately 10 pounds per year, per parts cleaner. It is assumed that the average annual VOC emissions from the two new parts cleaners would be the same as for the existing ones. Consequently, the total VOC emissions from the two new parts cleaners is estimated to be approximately 20 pounds per year. It is assumed that the two parts cleaners would be in operation after construction Phase I. Detailed emission calculations for the parts cleaners are provided in Appendix C.

**Emissions from New Heating Systems.** Heating systems would be installed during each construction phase. The rated heat input for each phase is as follows:

- Phase I: 2.1 million British thermal units per hour (MMBtu/hr)
- Phase II: additional 0.68 MMBtu/hr to Phase I
- Phase III: additional 0.29 MMBtu/hr to Phase II

All heating systems would use natural gas for fuel. Operation of the heating systems would be intermittent. Most of the operating hours would be during the 4-month heating season of November 15 through March 15, for approximately 8 hours per day. Operations at other times would be rare.

To estimate an upper bound, emissions were calculated using the assumption that the heating systems would operate 24 hours per day, 365 days per year. This approach resulted in much higher emissions than those that would be expected from the actual operating hours.

The heating system emission factors for VOCs, NO<sub>x</sub>, and CO were obtained from Tables 1.4-1 and 1.4-2 of *Supplement D to Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources* (EPA, 1998). The estimated emissions from the heating systems are listed in Table 4-3. Actual emissions would be much less than these amounts because the operating hours used in the calculations were much higher than the anticipated operating hours. Detailed heating system emissions calculations are provided in Appendix C.

TABLE 4-3

Estimated Alternative 2 Heating Systems Emissions during Operation

*Environmental Assessment for Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Operation Year	Annual Emissions (tpy)			
	VOC	NO <sub>x</sub>	CO	PM <sub>10</sub>
2006 to 2007 (Phase I)	0.05	0.9	0.7	0.07
2008 to 2010 (Phase II)	0.06	1.2	1.0	0.09
2011 to 2012 (Phase III)	0.07	1.3	1.1	0.1

**Emissions from Mobile Sources.** After construction of the Proposed Action, 150 additional personnel would work at the new Center. It is estimated that approximately 60 percent of these additional personnel would be living offbase, and would travel to Travis AFB on working days.

The mobile emissions associated with the additional vehicles traveling to Travis AFB were calculated based on emission factors derived from the On-road Mobile Source Emission

Inventory of Solano County for the year of 2010 (California Air Resources Board, 2004). These emissions were calculated using the State of California's on-road emissions model, EMFAC2002 V2.2.

It was assumed that the Travis AFB personnel would drive passenger cars, light-duty trucks, medium-duty trucks, and motorcycles to their work place. The number of vehicles of each vehicle type was estimated using the vehicle type distributions calculated from the emissions inventory.

The estimated emissions from the mobile sources during Center operations are 0.7 tpy of VOCs, 0.6 tpy of NO<sub>x</sub>, 6.0 tpy of CO, and 0.04 tpy of PM<sub>10</sub>. Detailed mobile-source emission calculations are provided in Appendix C.

**Emissions Summary.** Table 4-4 summarizes the projected total air emissions during construction and operation of the proposed Center.

TABLE 4-4  
Estimated Alternative 2 Emissions during Construction and Operation  
*Environmental Assessment for Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Emission Type	Annual Emissions (tpy)			
	VOC	NO <sub>x</sub>	CO	PM <sub>10</sub>
<b>Construction</b>				
2006 to 2007 (Phase I)	1.4	21.1	4.6	1.5
2008 (Phase I and Phase II)	0.7	10.2	2.2	0.7
2009 to 2010 (Phase II)	0.3	4.9	1.1	0.3
2011 (Phase III)	0.3	4.2	0.9	0.3
2012 (Phase III)	0.1	2.1	0.5	0.2
<b>Operation</b>				
2006 to 2007 (Phase I)	0.06	0.9	0.7	0.07
2008 (Phase I and Phase II)	0.07	1.2	1.0	0.09
2008 to 2010 (Phase II)	0.07	1.2	1.0	0.09
2011 (Phase III)	0.08	1.3	1.1	0.1
2012 (Phase III)	0.4	1.6	4.1	0.1
2013 and after	0.8	1.8	7.0	0.1
<b>Total</b>				
2006 to 2007 (Phase I)	1.5	21.9	5.3	1.6
2008 (Phase I and Phase II)	0.8	11.3	3.2	0.8
2008 to 2010 (Phase II)	0.4	6.1	2.0	0.4
2011 (Phase III)	0.4	5.5	2.0	0.4
2012 (Phase III)	0.6	3.7	4.5	0.3
2013 and after	0.8	1.8	7.0	0.1

#### 4.2.3.2 General Conformity

The CAA established a number of programs and permitting processes designed to protect and improve air quality. Section 176(c) of the CAA Amendment of 1990, 42 USC Section 7506(c), established a conformity requirement for federal agencies, which has been implemented by 40 CFR 93, Subpart B. A general conformity applicability analysis for the Proposed Action has been performed (see Appendix D) and is summarized here.

The Proposed Action would be located in the Basin in Solano County, which attains or is unclassified for all except the 1-hour and 8-hour ozone NAAQS. For these pollutants, the area is classified as nonattainment (other ) and nonattainment (marginal), respectively. The urbanized areas of Solano County (which include the area occupied by Travis AFB) are maintenance areas for carbon monoxide under the *Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). In these areas, the ozone precursor emissions, NO<sub>x</sub> and VOCs, and CO are subject to general conformity requirements. In accordance with the air conformity requirements of 40 CFR Sections 51.853 and 93.153(b)(1), the de minimis threshold for such ozone nonattainment areas is 100 tpy per ozone precursor pollutant (NO<sub>x</sub> and VOCs), per federal action. The de minimis threshold for a CO maintenance area is 100 tpy per federal action. The annual emission increases associated with the Proposed Action and the comparisons with the de minimis thresholds are shown in Table 4-5. Emissions of VOC, NO<sub>x</sub>, and CO during the construction and the operation of the proposed Center are all below the de minimis thresholds of 100 tpy for each of the three applicable pollutants.

TABLE 4-5

Estimated Alternative 2 Total Construction and Operation Emissions

*Environmental Assessment for Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Total Construction and Operation	Annual Emissions (tpy)		
	VOC	NO <sub>x</sub>	CO
2006 to 2007 (Phase I)	1.5	21.9	5.3
2008 (Phase I and Phase II)	0.8	11.3	3.2
2008 to 2010 (Phase II)	0.4	6.1	2.0
2011 (Phase III)	0.4	5.5	2.0
2012 (Phase III)	0.6	3.7	4.5
2013 and after	0.8	1.8	7.0
<b>De Minimis Threshold</b>	<b>100</b>	<b>100</b>	<b>100</b>

#### 4.2.3.3 Regional Significance

When the total emissions of the nonattainment and maintenance criteria pollutants do not exceed the de minimis limit, the emissions must then be compared to the air quality emissions inventory of the air basin to determine regional significance of the federal action. If the amount of the emissions is greater than 10 percent of the emissions inventory, the federal action is considered regionally significant for that pollutant (40 CFR Part 93, Subpart 153[i]).

Table 4-6 compares the net emissions from the construction and operation of the Proposed Action with the San Francisco Bay Area Air Basin (Basin) emissions inventory. VOC and NO<sub>x</sub> emissions inventory data were obtained from the *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD et al., 2001). CO emissions inventory data were obtained from the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). The potential increase in emissions of VOCs, NO<sub>x</sub>, and CO for both construction and operation are far below the 10 percent threshold. Therefore, the Proposed Action is not regionally significant.

TABLE 4-6

Comparison of Project Emissions and Emissions Inventory

*Environmental Assessment for Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

	VOC	NO <sub>x</sub>	CO
Basin Emissions Inventory	162,425	191,625	692,040
Construction and Operation Emissions (2006 to 2007)	1.5	21.9	5.3
<b>Percent of Emissions Inventory</b>	0.0009	0.01	0.0008
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (2008)	0.8	11.3	3.2
<b>Percent of Emissions Inventory</b>	0.0005	0.006	0.0005
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (2009 to 2010)	0.4	6.1	2.0
<b>Percent of Emissions Inventory</b>	0.0003	0.003	0.0003
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (2011)	0.4	5.5	2.0
<b>Percent of Emissions Inventory</b>	0.0002	0.003	0.0003
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (2012)	0.6	3.7	4.5
<b>Percent of Emissions Inventory</b>	0.0004	0.002	0.0007
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (after 2012)	0.8	1.8	7.0
<b>Percent of Emissions Inventory</b>	0.0005	0.001	0.001

## Notes:

Basin emissions inventory data for NO<sub>x</sub> and VOCs were obtained from *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD et al., 2001). Emissions inventory data for 2006 were used for emissions comparisons of all years.

Basin emissions inventory data for CO were obtained from *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). Emissions inventory data for 2005 were used for the emissions comparison of 2006 and 2007, and data for 2010 were used for the emissions comparison of 2008 and the years after.

#### 4.2.3.4 New Source Review

Installation and operation of the heating systems and parts cleaners would result in less than significant impacts to air quality. The Proposed Action would require permits for the two parts cleaners, unless they fall under certain exemptions listed in BAAQMD Regulation 2-1-118. Travis AFB would either select the cleaner sizes or types that are exempt from permits, or the cleaners would be operated within permitted parameters.

The new heating systems would also require installation and operation permits, unless the systems are exempt from permit requirements (BAAQMD Regulation 2-1-114) because the rated heat input would be less than 1 million British thermal units per hour.

## 4.3 Noise

This section describes noise impact criteria and discusses potential project-related noise impacts. Potential future noise impacts were determined by analyzing anticipated changes in noise exposure attributable to construction-related activities under the No Action Alternative and the Proposed Action at identified noise-sensitive locations. After construction, no change in noise levels is anticipated during use or operation under either alternative.

The fundamental measure of sound levels is expressed in dB using a logarithmic scale. Noise is generally defined as sound that is undesirable for the following reasons:

- It is intense enough to damage hearing
- It interferes with speech communication and sleep
- It is annoying

The Federal Interagency Committee on Urban Noise has developed land use compatibility guidelines for noise and provides recommended noise ranges for various land use categories based on this committee's findings. The Air Force has established land use noise compatibility criteria consistent with those published by the Federal Interagency Committee on Urban Noise in its publication, *Guidelines for Considering Noise in Land Use Planning and Control* (1980).

CNEL values of 60 dB and less are generally compatible with all land uses; 60 dB is the incompatibility threshold for residential and other noise-sensitive land uses, including schools, hospitals, and religious facilities. Commercial, industrial, and other types of recreational land uses (e.g., sports arenas, golf courses, amusements parks) are generally considered compatible with annual CNEL ranges between 70 and 75 dB, if measures are incorporated into the design and construction of structures associated with these land uses. Some transportation (e.g., railways, airports) and manufacturing (e.g., mining, nonlivestock agriculture, fishing, and forestry) land uses can tolerate annual CNEL ranges in excess of 85 dB. For comparison, the noise generated by a power lawnmower at 50 feet is 90 dB and the threshold for pain is 120 dB. Figure 4-1 shows some common activities and their corresponding dB levels.

Current operations occur at locations throughout the Base and experience noise levels that range from 65 to more than 75 dB. The Proposed Action site is located in an area that experiences noise levels between 65 and 70 dB. No significant additional noise would be generated by the proposed Center or by any activities taking place at the Center.

### 4.3.1 Alternative 1 – No Action

Implementing Alternative 1 would not result in any construction activities. Therefore, no construction noise would occur. Current operational noise levels are not expected to change.

### 4.3.2 Alternative 2 – Proposed Action

Typical construction-related noise is expressed in terms of schedule, equipment used, and types of activities. The noise level would vary during the construction period, depending

on the type of construction activity. Construction can generally be divided into the following five phases, in which different types of construction equipment are used (EPA, 1971; Barnes et al., 1977; Miller et al., 1978):

1. Site preparation and excavation
2. Concrete pouring
3. Steel erection
4. Mechanical
5. Cleanup

The EPA Office of Noise Abatement and Control and the Empire State Electric Energy Research Company have extensively studied noise from individual pieces of construction equipment and different types of construction sites (EPA, 1971; Barnes et al., 1977). Use of these data is conservative, because the evolution of construction equipment has been toward quieter designs because, since these studies, public concerns about the adverse effects of noise have resulted in the inclusion of noise controls in construction-equipment design. The country becomes more urbanized and the population becomes more aware of the adverse effects of noise.

The loudest equipment types generally operating at a site during each phase of construction are presented in Table 4-7, in dB. The long-term composite average or equivalent site noise level, representing noise from all equipment, also is presented in the table. The composite levels are occasionally lower than the individual levels because the loudest pieces of equipment would not be operating continuously throughout the construction phase. Pile driving and rock drilling are not currently anticipated, but, if necessary, would be limited in duration and occur only during the day. Table 4-7 shows the noise levels expected 50 feet from the site during construction, according to the types of construction activities that might occur during construction.

Noise naturally dissipates by atmospheric attenuation as it travels through the air. Other factors that can affect the amount of attenuation are ground surface, foliage, topography, and humidity. For each doubling of distance from a noise source, the level can be expected to decrease by approximately 6 dB.

TABLE 4-7

Typical Construction Equipment and Composite Site Noise Levels

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California*

Construction Phase	Loudest Construction Equipment	Equipment Noise Level at 50 feet (dB)	Composite Site Noise Level at 50 feet (dB)
Site Preparation and Excavation	Dump Truck	91	89
	Backhoe	85	
Concrete Pouring	Truck	91	85
	Concrete Mixer	85	
Steel Erection	Derrick Crane	88	89
	Jackhammer	88	
Mechanical	Derrick Crane	88	84
	Pneumatic Tools	86	
Cleanup	Rock Drill	98	79
	Truck	91	

Sources: EPA, 1971; Barnes et al., 1977

Noise associated with construction activities would be temporary, occur during daytime hours, and vary in levels, depending on the sources in use and types of activities. Noise associated with flightline activities at the Proposed Action site is approximately 70 to 75 dB CNEL (Travis AFB, 2002a). There are no sensitive receptors within 1,000 feet of the site. The closest buildings are Buildings 912 (Base Communications Office), 921 (Reserve Forces/ Training), 938, and 927, which are within 100 feet of the site boundary. These buildings could experience a slight elevation in noise levels resulting from construction activities. The buildings located adjacent to the site are within the 65- to 70-dB level noise contours associated with flight operations. The increase in noise from construction of the Proposed Action should be minor and temporary, and any increases should be offset by the noise control measures for ambient background noise that are currently in place at neighboring buildings. Because construction noise would not be substantially higher than background levels, there should be no significant noise impacts from construction to the adjacent buildings.

Several other buildings are within 250 feet of the site; noise levels are expected to be at or below background levels by the time they reach these offsite receptors. There are no receptors sensitive to noise near the site; therefore, no impacts to this population group are expected from construction noise. Construction activities are not expected to result in significant noise impacts.

## 4.4 Hazardous Materials, Wastes, Environmental Restoration Program Sites, and Stored Fuels

The U.S. Congress passed RCRA in 1976 to protect both human health and the environment from the mishandling of solid and hazardous waste and to encourage the conservation of natural resources. RCRA requires a system for managing hazardous and universal wastes. Regulations adopted by the EPA in 40 CFR Sections 260 through 279 carry out RCRA's congressional mandate. Regulations in Title 22 of the Code of California Regulations, Article 4.5, closely mirror those contained in the RCRA regulations (URS, 2004).

Travis AFB has procedures in place for handling and disposing of wastes, hazardous materials, and fuels. The procedures are detailed in the following guidelines:

- Air Force Instruction 32-7086, Hazardous Materials Management (Air Force, 1997)
- Air Force Instruction 32-7042, Solid and Hazardous Waste Compliance (Air Force, 1994a)
- Travis AFB Hazardous Waste Management Plan (Travis AFB, 1999)
- Travis AFB Environmental Flight Policy for Contractors (Travis AFB, 2002b)

All project alternatives would comply with these procedures. All project alternatives would generate waste. Compliance with waste management procedures would minimize potential impacts. Neither the current facility locations nor the Proposed Action site are located on or near any stored fuel locations; therefore, impacts to stored fuel locations are not anticipated.

#### 4.4.1 Alternative 1 – No Action

Implementation of the No Action Alternative would not result in changes to current hazardous waste production or waste management practices. Several buildings are located near ERP sites and one building is located on an ERP site. Under this alternative, these facilities would continue to be used.

Locating the TDC and RAU at Travis AFB would increase the production of solid waste from warehousing and administrative activities. Disposal of the waste would be in accordance with the Travis AFB pollution prevention and waste management plans, and, therefore, result in less than significant impacts.

#### 4.4.2 Alternative 2 – Proposed Action

The Proposed Action would not involve any new activities that would generate hazardous waste. A vehicle maintenance facility would be constructed as part of the Proposed Action for light vehicle maintenance, such as oil and tire changes. Vehicle maintenance is currently conducted prior to deploying any vehicle. The vehicle maintenance facility would be new, but the activity that creates the hazardous waste, vehicle maintenance, would be a continuance of current practices. All hazardous waste handling and management techniques would be followed. Impacts from vehicle maintenance would not be greater than the impacts that are associated with current vehicle maintenance activities. For this reason, and because all hazardous waste management practices would be followed, impacts associated with the vehicle maintenance facility would be less than significant.

This alternative could result in a slight increase in onsite workers and an accompanying increase in solid waste generation. Impacts would be as described for Alternative 1.

The proposed vehicle wash rack would be equipped with an O/WS that would comply with the Air Force *Environmental Compliance Policy for Oil/Water Separators Operations, Maintenance and Construction* (1994b). The policy stipulates that O/WSs, including associated oil recovery tanks, be designed to have double liners with leak detection. Use and maintenance of the O/WS will generate additional quantities of hazardous waste. The wash rack would be used intermittently before vehicles are deployed and after they return. Hazardous waste would be handled, stored, and disposed of in accordance with all applicable regulations and policies. The OW/S would be maintained at regularly scheduled intervals. The impact from operation of the O/WS and additional hazardous waste generation would be less than significant.

As illustrated on Figure 3-1, several ERP sites are located near the Proposed Action site. Some ERP sites near the project site have contaminated groundwater. The site could be impacted if contaminated groundwater migrated to the Proposed Action site. The groundwater gradient in the vicinity of the project site is generally to the south (CH2M HILL, 2003). ERP site DP039, which has a contaminated groundwater plume, is located north of the project site. A groundwater extraction system is currently in place at DP039, and the plume appears to be contained (CH2M HILL, 2003). Several ERP sites are located slightly east and south of the site (the ERP site to the south, SD037, is discussed below). A groundwater extraction and treatment system is currently in place to contain and remediate groundwater contamination associated with the ERP sites east of the Proposed Action site (CH2M HILL, 2003).

There are ERP sites with soil contamination located to the north, east, and southeast of the project site. The Proposed Action would not affect these sites because no soil at the ERP sites would be disturbed by the Proposed Action.

As illustrated on Figure 3-1, the southern boundary of the Proposed Action overlaps the northern boundary of ERP site SD037. SD037 has known soil and groundwater contamination. No soil or groundwater contamination has been identified on the portion of SD037 that overlaps the Proposed Action site (CH2M HILL, 2003). The boundary of SD037 overlaps a small portion of the Proposed Action site, but the contamination associated with SD037 does not. The nearest monitoring well located within the SD037 boundary, just south of the Proposed Action site, is MW729x37 (see Figure 4-2). No constituents of concern have been detected at MW729x37 (CH2M HILL, 2003). To ensure that work within the boundary of ERP site SD037 is conducted safely, the following steps would be taken:

- Consult the Base Remediation Program Manager prior to construction
- Obtain a dig permit (60 AMW Form 55)
- Prepare a contingency plan outlining steps to be taken in case soil discoloration or hydrocarbon vapors are detected or groundwater is encountered during construction (the contingency plan would be reviewed by the Base Remediation Program Manager prior to construction)

If contaminated materials were encountered during construction, protective measures would be implemented based on direction from the Base Remediation Program Manager, and potential impacts to human health and the environment from the existing contamination would be less than significant.

Because there are no known contaminants on the Proposed Action site and because appropriate steps would be taken in the unlikely event that contamination were discovered at the site, potential impacts to human health and the environment from the construction and operations of the Proposed Action would be less than significant. The Proposed Action would not significantly impact ERP sites at the Base.

## 4.5 Water Resources, Floodplains, and Wastewater

The following analysis is based on a review of the available literature and the application of professional judgment. Neither of the alternatives is located within the 100-year floodplain (Travis AFB, 2002a and 2003; CH2M HILL, 2003). The alternatives would not use groundwater or release water in a way that could impact groundwater. No significant impacts to floodplains or groundwater are expected from either of the project alternatives.

### 4.5.1 Alternative 1 – No Action

If Alternative 1 were selected, no changes to the stormwater drainage system would occur. The total amount of wastewater created would increase by the amount generated by the additional personnel. When compared to the total amount of sewage generated basewide, the additional wastewater generated by additional personnel would be less than significant.

## 4.5.2 Alternative 2 – Proposed Action

The Alternative 2 site is currently an open field. As shown on Figure 3-1, the only water resources located on and adjacent to the site are unlined drainage ditches that are part of the Base stormwater drainage system (Travis AFB, 2002a and 2003; CH2M HILL, 2003). The Proposed Action is located in drainage basin VI, as depicted on Figure 3-2.

### 4.5.2.1 Water Quality

The drainage ditches on and adjacent to the Proposed Action site connect to the stormwater drainage system that conveys stormwater to Union Creek via outflow VI. Pollutants introduced to the drainage ditches could cause a significant impact to the water quality of Union Creek. Construction would potentially produce short-term impacts to the drainage ditch, and ultimately to Union Creek, from erosion during earth-moving activities. The Base currently has a stormwater permit and a stormwater pollution prevention plan. Stormwater discharges at the Base are regulated under the Travis AFB Industrial Activities Storm Water Discharge Permit (Travis AFB, 2002a). A dig permit (60 AMW Form 55) would be acquired prior to construction. The project would comply with all applicable restrictions set forth in the stormwater permit, the stormwater pollution prevention plan, and the dig permit. Best Management Practices would be implemented in accordance with these permits to prevent erosion. Compliance with the relevant permits and implementation of Best Management Practices would reduce potential impacts from construction activities or stormwater discharges to Union Creek to less than significant levels.

### 4.5.2.2 Flooding

Construction of the Center would increase the amount of impervious surface at the site, decreasing stormwater infiltration rates and increasing the quantity of stormwater runoff in the immediate area. Historically, there has been no flooding at the site, and the stormwater drainage system on and adjacent to the site is hydraulically adequate (CH2M HILL, 2000). There are two non-maintained, unlined drainage ditches on the Proposed Action site. One is on the east side of the site and the other is on the west. Covering 670,000 ft<sup>2</sup> with impermeable surfaces would increase the Base's total impermeable surface by 0.2 percent. This increase would be considered less than significant, and is not expected to contribute significantly to flooding.

In addition, Travis AFB has conducted studies of the stormwater drainage system and is planning future activities to address stormwater drainage system deficiencies (Travis AFB, 2002a).

### 4.5.2.3 Wastewater

The Proposed Action would centralize the 650 personnel and activities involved in AMOG operations that currently take place across the Base. This concentration of personnel and activities, although not increasing the total amount of wastewater produced, would increase the amount of wastewater entering the sanitary sewer system from the Proposed Action site and change conveyance patterns. Changing conveyance patterns would result in less than significant impacts to the sewer system. The vehicle wash rack would be equipped with an O/WS, which would convey treated sewage to the sanitary sewer system. The Fairfield-Suisun Sewer District views the Base as a single metal finishing facility. The O/WS would

need to be approved by the district prior to operations, and the district could require a pretreatment system for metals. The amount of wastewater generated would be less than significant compared to basewide sewer operations.

Moreover, the Base is addressing the deficiencies of the sanitary sewer system and will incorporate the additional localized sewage generated by the additional 150 personnel, the concentration of personnel, and the vehicle wash rack discharge associated with the Proposed Action into designs for system upgrades. Because the Base is addressing the deficiencies of the sanitary sewer system and is planning to provide adequate sanitary sewer capacity for the Proposed Action, potential impacts from the Proposed Action would be less than significant.

## 4.6 Biological Resources – Federal- and State-listed Threatened or Endangered Species

Impacts to biological resources would be significant if species or habitats of concern, including waters of the U.S., were adversely affected over relatively large areas, or if disturbances and impacts could cause reductions in population size or distribution of a species of concern. This section analyzes the potential for adverse impacts to biological resources, such as habitat loss, from implementation of the No Action Alternative and the Proposed Action.

### 4.6.1 Alternative 1 – No Action

Under the No Action Alternative, the construction of the Center would not occur and the existing practices would continue. TDC and RAU would be located in existing buildings at Travis AFB and new construction would not be required. The No Action Alternative would not result in any construction or other changes to the physical environment and, therefore, not result in impacts to biological resources.

### 4.6.2 Alternative 2 – Proposed Action

The Alternative 2 site is currently an open field. As shown on Figure 3-1, no known wetlands (i.e., riparian, vernal pools, or meadows) are located on the site (Travis AFB 2002a and 2003; CH2M HILL, 2003). However, a vernal pool is located approximately 200 feet west of the boundary of the Alternative 2 site. Surveys were conducted in 1991, 1995, and 2001 to determine the potential presence of special-status flora, fauna, or habitats at the Alternative 2 site and its vicinity. The surveys did not identify special-status species or their habitats at the site. As a precautionary measure, exclusion fencing and an environmental monitor would be used during construction to keep construction equipment and workers a minimum distance of 100 feet from the vernal pool. Therefore, impacts to wetlands or special-status species and their habitats would not occur.

Paving the site would eliminate current vegetation (i.e., grass and other herbaceous plants) and use of the site by wildlife for foraging and hunting. However, adjacent areas on the west side of the site consist of open fields and are restricted from use because they are located within a Q/D arc. Therefore, the areas remain available for use by wildlife and impacts to vegetation and wildlife from the Proposed Action would be less than significant.

This alternative would affect the burrowing owls at the Proposed Action site. Burrowing owls are federal and state Species of Special Concern. Phase I of the Proposed Action would involve grading and building on the location that is currently occupied by the burrowing owls. Passive relocation would minimize impacts to the birds. Passive relocation is defined as encouraging owls to move to alternate burrows that are more than 50 meters (approximately 160 feet) from the impact zone and within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls. Additional habitat exists west of the Proposed Action site. Construction would not occur in this area because it is part of a buffer zone for explosives storage.

Owls would only be relocated during the non-breeding season and in consultation with Environmental Flight. Owls would be excluded from burrows in the immediate impact zone and within 50 meters of the Proposed Action site by installing one-way doors in burrow entrances. The one-way doors would be left in place for 48 hours to ensure that owls have left the burrow before construction begins. The use of passive relocation techniques would reduce impacts to burrowing owls to a less than significant level.

## 4.7 Socioeconomic Resources

The socioeconomic conditions of the region could be affected if implementation of the No Action Alternative or the Proposed Action caused changes in the rate of population growth, demographic characteristics of the Base or Solano County, or employment or economic activity onbase or in the county. This section evaluates potential impacts to socioeconomic resources. The Proposed Action would result in short-term, beneficial impacts.

### 4.7.1 Alternative 1 – No Action

Selection of the No Action Alternative would add more personnel associated with locating the TDC and RAU at Travis AFB. The increase in personnel would result in additional need for housing and increased economic activity. The type and location of housing needed and the increase in economic activity are speculative; it has not yet been determined whether personnel to be permanently stationed at Travis AFB would be single or move to the area with their families. The addition of more personnel represents an increase in Base personnel of approximately 1 percent.

Adding 150 personnel and their families would locally have a beneficial socioeconomic impact, because they would fill vacant housing and contribute to economic growth with their purchasing power. However, given that the total population of Solano County is approximately 412,000, the increase in population from additional personnel and their families would be less than 1 percent, and the resulting impact on socioeconomic resources would be less than significant.

### 4.7.2 Alternative 2 – Proposed Action

Implementation of Alternative 2, the Proposed Action, would have a temporary, beneficial impact on socioeconomic resources because it would require a temporary increase of several hundred civilian contract employees (construction workers) at the Base for each construction phase. Given the ample supply of construction labor in the region, it is

anticipated that construction workers would commute to the work site and would not require temporary housing.

Compared to the No Action Alternative, the Proposed Action would not result in long-term change to socioeconomic conditions. The personnel who currently operate the AMOG facilities would operate the Center. The potential socioeconomic impact associated with the permanent assignment of additional personnel at Travis AFB would be the same as described for Alternative 1; therefore, there would be no incremental impact relative to the No Action Alternative.

Although the expenditure of approximately \$17.5 million for the Proposed Project represents approximately 2 percent of the Base's overall economic impact on Solano County, it would occur over several years. The annual financial expenditure for this project is minor when compared to ongoing construction activities in the region, and would have no appreciable effect on the regional economy. However, there would be minor, short-term economic benefits to local convenience businesses from construction workers purchasing meals, gas, and other commodities in the vicinity of the Base. The impacts to socioeconomic conditions from temporary employment would be beneficial, but negligible compared to the Base or the county economy.

## 4.8 Cultural Resources

The following laws and regulations govern cultural resources management at Travis AFB (Travis AFB, 2003b):

- Antiquities Act of 1906 (16 USC Sections 431 through 433; 34 Stat. 225)
- National Historic Preservation Act of 1966, as amended (16 USC Section 470)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC Sections 3001 through 3013)
- Archaeological Resources Protection Act of 1979 (16 USC Sections 470aa through 47011)
- Archaeological and Historic Data Preservation Act of 1974 (16 USC Sections 469 through 469c)
- American Indian Religious Freedom Act of 1978, as amended (42 USC Sections 1996 and 1996a)
- NEPA (42 USC Sections 4321 through 4370c)
- Cultural Resources Management (Air Force Instruction 32-7065)
- Protection of Historic Properties (36 CFR Section 800)
- National Register of Historic Places (36 CFR Sections 60, 61, 63, and 68)
- World Heritage Convention (36 CFR Section 73)
- Waiver of Federal Agency Responsibilities under Section 110 of the National Historic Preservation Act (36 CFR Section 78)

- Curation of Federally-Owned and Administered Archeological Collections (36 CFR Section 79)
- Preservation of American Antiquities (43 CFR Section 3)
- Protection of Archaeological Resources (43 CFR Section 7)
- Native American Graves Protection and Repatriation Act (43 CFR Section 10)
- Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation
- Legacy Resource Protection Program Act of 1992 (Public Law No. 101-511, Section 8120)
- Protection and Enhancement of the Cultural Environment (EO 11593)
- Accommodation of Sacred Sites (EO 13007)
- Consultation and Coordination with Indian Tribal Governments (EO 13175)

The primary statutes requiring federal agencies to protect cultural resources are the National Historic Preservation Act, EO 11593, the Archaeological and Historic Preservation Act, and the Archaeological Resources Protection Act (URS, 2004). The Cultural Resources Manager, under the supervision of the Environmental Flight Chief, is responsible for managing natural and cultural resources at Travis AFB.

#### **4.8.1 Alternative 1 – No Action**

Of the 11 buildings currently being used by AMOG, only Building 904 is considered a historic building because it is potentially eligible for inclusion in the National Register of Historic Places. If the No Action Alternative were selected, current practices would continue and construction would not occur. Therefore, no change in impacts to cultural resources would occur under the No Action Alternative.

#### **4.8.2 Alternative 2 – Proposed Action**

There are no known archeological sites, historic buildings, or other culturally sensitive areas at the proposed site for Alternative 2. However, several buildings potentially eligible for inclusion in the National Register of Historic Places (historic buildings) are located on the periphery of the site, to the north, west, and east. Six historic buildings are located approximately 50 feet from the boundary of the Proposed Action (see Figure 3-1). Construction of Alternative 2 is not anticipated to impact the historic buildings in the vicinity of the site.

If cultural or archaeological resources were disturbed during construction, the impact would be considered significant. Therefore, prior to construction, a dig permit (60 AMW Form 55) would be acquired from 60 CES/CEO and a contingency plan would be prepared requiring the following:

- All activities would take place in compliance with the Travis AFB Cultural Resources Management Plan (Travis AFB, 2003b).

- If any human remains or archaeological or cultural artifacts were discovered during construction, work would cease and the Cultural Resources Manager would be contacted.

Adherence to the dig permit and implementation of the contingency plan would reduce the potentially significant impact to less than significant levels.

## 4.9 Land Use

This section discusses the potential effects to land use from either of the project alternatives. Land use at Travis AFB is described in the Travis AFB General Plan (Travis AFB, 2002a).

### 4.9.1 Alternative 1 – No Action

Under the No Action Alternative, construction of the Center would not occur, and there would be no change to the existing land use. Activities associated with the TDC and RAU would consist of warehousing and administration. When the TDC and RAU become established at Travis AFB, locations that have compatible land use designations would be found to house them.

### 4.9.2 Alternative 2 – Proposed Action

According to the Travis AFB General Plan land use maps, the existing and future land use designation for the Proposed Action site is Aircraft Operations and Maintenance. This alternative proposes to construct the Center, an operation that is mission-critical and would be compatible with the current and future land use designation. The closest ERP site with an LUC is SD043, located approximately 300 feet east of the Proposed Action site.

Construction of the Center would not affect this site. The west side of the Proposed Action site is adjacent to a Q/D arc border. No activity associated with the Proposed Action would extend into the Q/D arc.

There are no conflicting land use restrictions (i.e., LUCs or Q/D arcs) that would conflict with the Proposed Action. Therefore, there would be no impact to land use from the Proposed Action.

## 4.10 Transportation System

### 4.10.1 Alternative 1 – No Action

The No Action Alternative assumes that the construction of the Center would not occur and that existing facilities would continue to be used at the various locations around the Base. Current traffic levels and patterns to various AMOG facilities would be maintained.

The addition of more personnel to the Base, an increase of approximately 1 percent to the Base's permanent employment, would increase traffic. Additional traffic is generated by contractors who enter the Base daily. Adding more cars would be comparatively small, and associated traffic impacts would be less than significant. Construction would not be required under the No Action Alternative and construction-related traffic would not occur.

### **4.10.2 Alternative 2 – Proposed Action**

The roadways impacted by the construction traffic, including travel by construction workers in their personal vehicles to the construction site, would be the main Base thoroughfares, Dixon Avenue and Ragsdale Street, as they would be used to gain site access. According to the Travis AFB General Plan, there are no significant transportation or parking issues associated with either Dixon Avenue or Ragsdale Street (Travis AFB, 2002a). Traffic impacts resulting from the proposed construction would be temporary and, therefore, less than significant.

Alternative 2 proposes to construct the Center in the southwest portion of the Base, near the airfield. The Proposed Action would not add vehicle traffic to Travis AFB, with the exception of adding more personnel after the transition to the CRW. Potential impacts associated with additional personnel under the Proposed Action would be as described for the No Action Alternative.

Current AMOG personnel would drive to a different location onbase as compared to the No Action Alternative. As under Alternative 1, vehicle transportation of personnel to and from the airfield would be required, although for a shorter distance, because the Center would be located closer to the flightline. Similarly, building employees would have to travel to a different building to reach their work location than under current conditions. Depending on the location of their residences, this could be a longer or shorter distance than they are currently driving. The impact from the changed route of travel for building employees is negligible and impacts to the transportation systems resulting from implementation of this alternative would be less than significant.

## **4.11 Airspace/Airfield Operations**

### **4.11.1 Alternative 1 – No Action**

No change in operations of the airspace/airfield would result from implementation of the No Action Alternative.

### **4.11.2 Alternative 2 – Proposed Action**

The Center would be located outside of airspace or airfield operational areas. The Center would be constructed in an area that complies with UFC 3-260-01 standards for location, with respect to the runway centerline and apron clearance. Construction of the building would not result in impacts to airspace or airfield operations.

## **4.12 Safety and Occupation Health**

### **4.12.1 Alternative 1 – No Action**

Implementing the No Action Alternative would not change health or safety conditions. Construction would not be required under this alternative; therefore, no changes or impacts to ongoing safety and occupational health practices would occur.

### 4.12.2 Alternative 2 – Proposed Action

Implementing Alternative 2 would require the construction of new buildings and paved areas, involving military and civilian personnel. Implementation of the Proposed Action would follow all applicable rules and regulations regarding safety and occupational health. A health and safety plan for construction would be prepared that would include requirements, such as shoring for excavations. Construction areas would be secured as necessary to prevent unauthorized personnel from entering the work sites or excavations.

In accordance with the Occupational Safety and Health Act, all workers would be provided with appropriate personal protective equipment, including required traffic safety equipment. Personal protective equipment would include, but not be limited to, approved hard hats, safety shoes, gloves, goggles, eye/face protection, safety belts, harnesses, respirators, hearing protection, and traffic safety vests. The potential for adverse impacts to safety and occupational health are expected to be minor and limited to the duration of construction.

During operation, implementation of Alternative 2 would provide modern facilities for the administration, warehousing, and vehicle maintenance needs of the future CRW. The facilities would comply with all applicable design codes and all activities performed in and around the facilities would follow standard operating procedures. The facilities would be built for the intended use, and would thus be safer than the facilities currently used, resulting in a small beneficial impact during operation.

Only military personnel are involved in Center operations. Therefore, no impacts to public health are anticipated.

## 4.13 Environmental Management (Including Geology, Soils, and Pollution Prevention)

### 4.13.1 Alternative 1 – No Action

There would be no change to geology or soils if the No Action Alternative were implemented. The TDC and RAU would generate primarily solid waste associated with warehousing and administrative operations, and would implement the Travis AFB Pollution Prevention Plan.

### 4.13.2 Alternative 2 – Proposed Action

No important geological or soil resources are present in the area of the Proposed Action. Construction of Alternative 2 would disturb surface soils and permanently alter the ground surface from a soil surface to a paved surface. Total disturbance would cover approximately 670,000 ft<sup>2</sup>, including access and staging areas during construction. Disturbance of this area would represent disturbance of 0.2 percent of the Base's total area. No rare or valuable soils would be disturbed. Therefore, potential impacts to geology or soils associated with the Proposed Action would be less than significant.

Implementation of the Proposed Action would comply with the overall objectives of the pollution prevention program at Travis AFB. Construction of the facility would produce some waste in the form of construction debris, and all measures to prevent pollution would

be taken. All wastes generated during the construction phase of the project would be removed from the site and recycled. If recycling were not possible or feasible, the waste would be disposed of in accordance with all applicable regulations and policies. Generation and management of waste during construction is expected to meet the pollution prevention goals set in the Travis AFB Pollution Prevention Management Action Plan.

Waste production during operation of the building would be approximately equal to the current levels. Moving the operations from the 11 locations that are currently used to one centralized location would not result in a significant change in waste generation. Improved facilities are expected to enhance the proper management and storage of all waste types. Impacts potentially associated with the TDC and RAU would be as described under the No Action Alternative.

Source reduction and waste recycling would be implemented to the extent practicable. Scrap ferrous and nonferrous metals from the construction project would be recycled. After construction, recyclable administrative refuse, including cardboard, plastic bottles, cans, and mixed paper, would continue to be collected and delivered to the recycling center, as is currently done. Please see Section 4.4 for more information on waste and hazardous waste production and management. This alternative is not expected to result in any impacts to waste production or pollution prevention management.

## **4.14 Environmental Justice and Protection of Children**

### **4.14.1 Alternative 1 – No Action**

Implementation of the No Action Alternative would not affect any minority or low-income populations, or children.

### **4.14.2 Alternative 2 – Proposed Action**

No minority or low-income populations in the surrounding area would be affected by the construction of the Proposed Action. In addition, the Proposed Action would not cause any adverse impacts with the potential to disproportionately affect such populations if they were present.

Construction sites can be attractive, and therefore dangerous, to children. However, this alternative site is not located near any onbase or offbase family housing areas or schools. The nearest family housing and a child development center are located approximately 1 mile northeast of the site. The construction site, excavations, and materials would be properly secured during construction.

Emissions from facilities operations would either be exempt from permitting or comply with permit conditions. Hazardous wastes produced at the site would be handled and disposed of in accordance with applicable regulations and the Base Hazardous Waste Management Plan and would, therefore, not pose a disproportionate risk to minority populations.

Implementation of the Proposed Action would not affect any minority or low-income populations or children.

## 4.15 Indirect and Cumulative Impacts

Indirect impacts are defined by the CEQ in 40 CFR 1508.8 as those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Indirect impacts of the Proposed Action have been addressed in the preceding resource-specific analyses. Implementing the Proposed Action is expected to result in less than significant indirect impacts to environmental or socioeconomic resources. The Proposed Action would not result in any significant growth-inducing effects, induced changes in population, or related effects. Compared to the No Action Alternative, Alternative 2 would not result in any changes associated with the additional permanent personnel to Travis AFB. Potential impacts to socioeconomics and health and safety would be slightly beneficial.

Cumulative impacts are defined by the CEQ in 40 CFR 1508.7 as “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.”

Projects considered for cumulative impact in this EA are those that are ongoing or planned to begin within the next 3 years at Travis AFB. Projects being considered beyond 3 years are too uncertain to be evaluated. The following actions, organized by start date, are the foreseeable future actions that could occur at Travis AFB (URS, 2004):

- **Fiscal Year 2005**
  - Construct C-17 roads and utilities (40,000 ft<sup>2</sup> for roadways)
  - Construct Fire/Crash Rescue Station (30,192 ft<sup>2</sup>)
  - Construct Coast Guard Facility (103,000 ft<sup>2</sup>)
  - Replace Transportation Squadron wash rack
  - Replace three water reservoirs
- **Fiscal Year 2006**
  - Construct C-17 Maintenance Training Facility, AGE Facility, Nose Dock, Engine Storage Facility, Munitions Maintenance Facility (132,750 ft<sup>2</sup>)
  - Construct Security Forces Armory/Combat Arms Campus Facility (18,000 ft<sup>2</sup>)
  - Construct In-flight Kitchen/Fleet Service Facility (23,000 ft<sup>2</sup>)
  - Replace Heating, Ventilation, and Air Conditioning, Building 878
  - Renovate West/Center Island, Building 810 (renovate West Island and Center Island upstairs and downstairs office/work space; upgrade/repair area fire suppression, heating, ventilation, air conditioning, electrical, and lighting; lower ceilings; replace doors, bathroom facility, and plumbing; paint as required; update phone and computer line service)
  - Repair 600 Ramp, Spots 605 through 607

- Paint Shop floor, Building P-41 (S/M)
- Repair flooring at Passenger Terminal, Building 3 (replace old and damaged flooring in the following areas of the passenger terminal with Marmoleum®: telephone communications/security monitor room, dispatch office, vehicle control NCO's office, building custodian's office, workers' break room, and all hallways)
- Repair Aircraft Hangar 809 floor (R/M) (clean, repair, and paint hangar floor with poly-based paint/nonskid floor coating, paint function lines as required)
- Install additional lighting, Building 977 (install additional lighting along west side fence line)
- Demolish the following facilities:
  - Building 235 (Audio Visual)
  - Building 238 (Reserve Forces Operational Training)
  - Building 242 (Squadron Operations)
  - Building 572 (Warehouse)
  - Building 690 (Thrift Shop)
  - Building 755 (Shop Aircraft General Purpose)
  - Building 828 (Security Forces, Control)
  - Building 943 (Security Forces, Operations)
- **Fiscal Year 2007**
  - Demolish Building 882 (Civil Engineering Maintenance Shop)
  - Renovate Hangar 808 (R/M)
  - Repair Hangar 808 floor (paint hangar floor with nonskid materials and finish with gloss coat)
  - Remove water filter system (remove water filter recycle system from floor system rerouted to the sanitary sewer system; may require an oil-water separator)
  - Construct C-17 two-bay hangar, addition/alteration to Composite Shop, Wheel and Tire Shop, taxiway repairs (719,730 ft<sup>2</sup>)
  - Construct Passenger Terminal (94,519 ft<sup>2</sup>)

Alternative 1 (No Action) would add 150 permanent personnel. Regionally, these impacts would be considered to contribute minimally to current traffic, air resources, and socio-economic conditions and, therefore, would not contribute to cumulative impacts. Potential cumulative impacts to the resource areas from the Proposed Action are discussed below.

The potential for cumulative impacts attributable to air quality would be from multiple construction projects occurring simultaneously. The potential impacts to air quality from construction are discussed in Section 4.2. Not all of the actions listed would be constructed simultaneously. The Proposed Action would conform to the SIP and not be regionally significant. The Proposed Action, after construction is complete, would be a minor source of emissions, and would contribute insignificantly to long-term cumulative impacts to air quality.

As discussed in Section 4.5, the Proposed Action could result in impacts to water resources during construction. The Proposed Action would add to the total amount of impervious surface at the Base. This increase in impervious surface, in conjunction with other planned future actions, could increase the amount of stormwater runoff from the Base. Travis AFB currently has a basewide stormwater permit and a basewide Stormwater Pollution Prevention Plan. Impacts from multiple actions would be addressed by the basewide permits and programs that are currently in place.

As noted in Section 3.5, both the stormwater drainage system and the sanitary sewer system are inadequate for current Base needs. Future actions would put additional strain on both systems. The Base has conducted studies to define system deficiencies and is developing remedial measures. The design of any future sewer and stormwater upgrades would account for current and future needs.

If the Proposed Action were constructed, the facilities that currently house AMOG would become vacant. Depending on their state of repair, the buildings would either be demolished or potentially used to accommodate other Base functions, as needed and appropriate. Specific plans for disposition of these buildings have not been made and any discussion of potential impacts would be speculative.

## 4.16 Unavoidable Adverse Impacts

As detailed in the preceding resource-specific analyses, no significant unavoidable adverse impacts are expected from the construction or operation of the Center under the Proposed Action Alternative. Adverse impacts resulting from construction of the Center are anticipated to be minor and short in duration, and would not result in significant adverse impacts to environmental or socioeconomic resources.

## 4.17 Relationship between Short-term Uses and Enhancement of Long-term Productivity

The purpose of the Proposed Action is to construct a Center that is adequate to meet the needs of Base operations. AMOG operations are currently housed in 11 buildings that are not adequate for Base needs and detract from Base operations. Construction of centralized AMOG facilities would reduce the potential for errors and accidents e.g., accidental fuel spills. Centralized facilities would also improve weapons security and mission readiness by reducing the response time. Moreover, they would prepare the Base for the reorganization from AMOG to CRW. Long-term productivity would be enhanced by implementing Alternative 2 because the inefficiencies resulting from use of the current facilities, as listed in Section 1.2, would be remedied.

## 4.18 Irreversible and Irretrievable Commitment of Resources

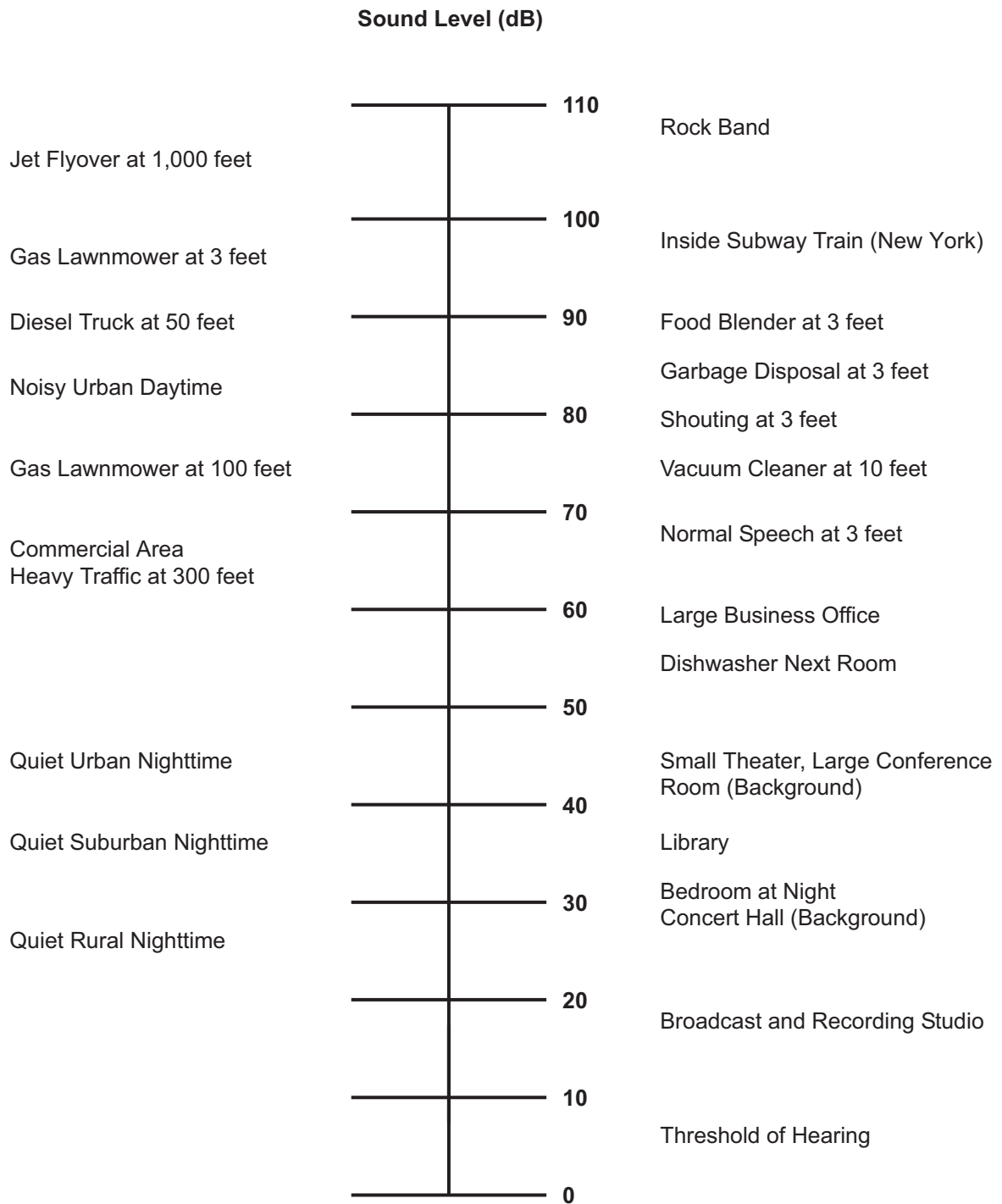
Resources expected to be affected during the long-term use of the Center include additional electricity and natural gas for heating. The current main electrical system is anticipated to

have sufficient capacity to accommodate the expected increases in load. The following electrical loads are expected for the new spaces and their corresponding systems:

- Lighting – 135,000 watts
- Power – 563,000 watts
- Heating, Ventilating, and Air Conditioning – 42,000 watts
- Heat Input (gas consumption) – 2.9 MMBtu/hr

## Common Outdoor Sound Levels

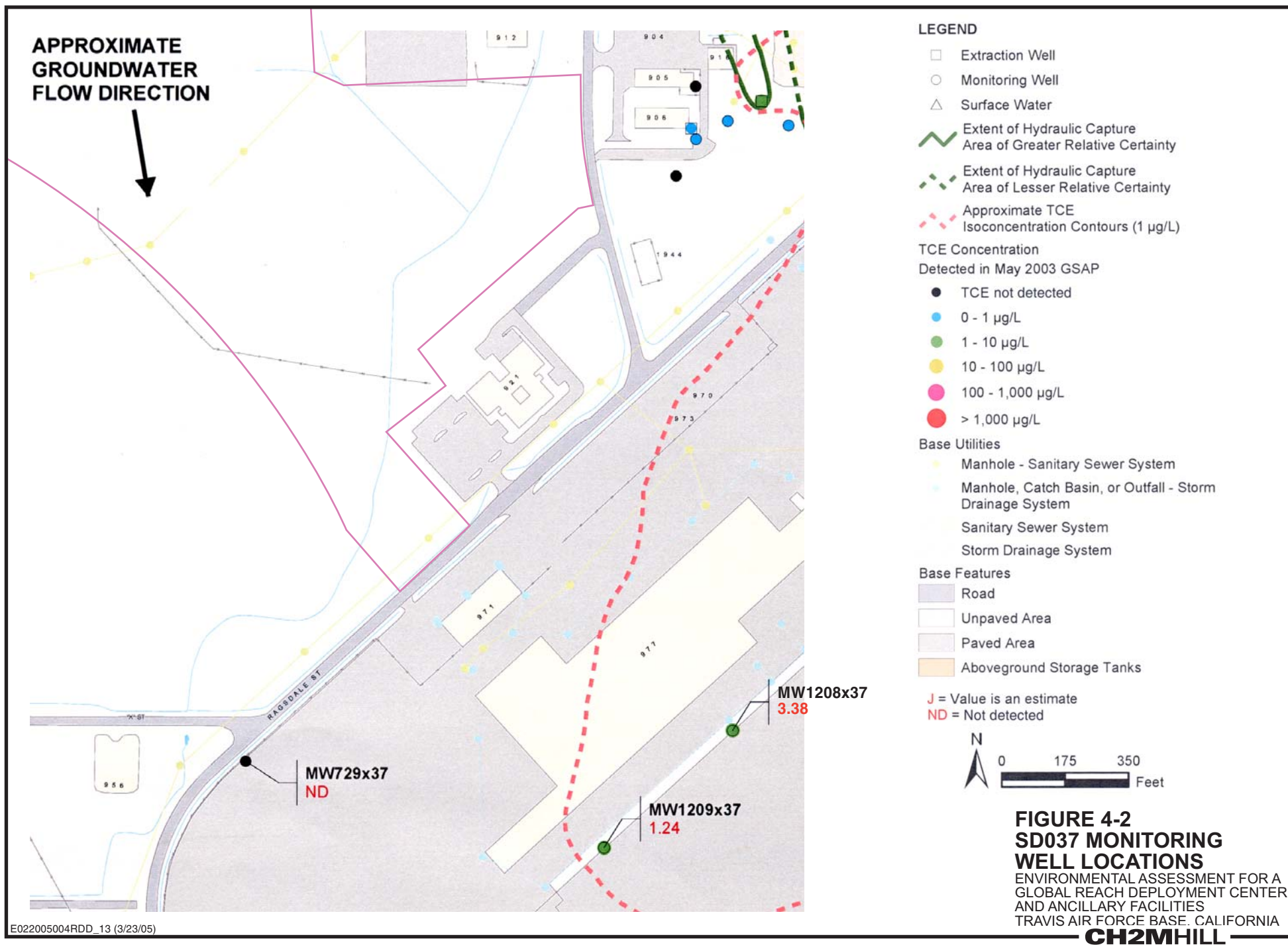
## Common Indoor Sound Levels



**FIGURE 4-1**  
**COMPARATIVE SOUND LEVELS**

ENVIRONMENTAL ASSESSMENT FOR A  
GLOBAL REACH DEPLOYMENT CENTER  
AND ANCILLARY FACILITIES  
TRAVIS AIR FORCE BASE, CALIFORNIA

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SECTION 5.0

# List of Preparers

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Name	Education	Experience	Role
Kim Basial	B.A., English, Linguistics, and Speech	2 years	Technical Editor
Tony Jaegel	B.S., Environmental Resources Engineering	12 years	Project Manager
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## SECTION 6.0

# List of Agencies and People Consulted and/or Provided Copies

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The following people were consulted during preparation of this EA:

- Captain Jeremiah Frost, CES/CEV
- Robert Holmes, CES/CEV
- Rodolfo Pontemayor, CES/CEV
- Wayne Williams, CES/CEV

Travis AFB coordinated distribution of this EA to the following public and regulatory agencies:

- Federal
  - U.S. Environmental Protection Agency, Region 9  
Director, Office of Federal Activities  
75 Hawthorne Street  
San Francisco, California 94105
  - U.S. Department of the Interior  
U.S. Fish and Wildlife Service  
CA/NV Operations Office  
2800 Cottage Way, Room W-2606  
Sacramento, California 95825
- State
  - State of California Clearinghouse  
Governor's Office  
1400 Tenth Street, Room 121  
Sacramento, California 95814

No comments were received. The proof of publication is included in Appendix E.

## SECTION 7.0

# Works Cited

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Barnes, J.D., L.N. Miller, and E.W. Wood. 1977. *Power Plant Construction Noise Guide*. Empire State Electric Energy Research Corporation.

Bay Area Air Quality Management District (BAAQMD), Association of Bay Area Governments, and Metropolitan Transportation Commission. 2001. *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard*. October.

Holmes, Bob/Travis Air Force Base, Natural Resources Manager. 2005. Email correspondence to Karin Lilienbecker/CH2M HILL. April 12.

California Air Resources Board (CARB). 2004. *California Ambient Air Quality Data 1980-2002*. January.

California Air Resources Board (CARB). 2001. *The 2001 California Almanac of Emission and Air Quality*.

California Air Resources Board (CARB). 1998. *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas*. September.

California Department of Fish and Game (CDFG). 2004. *State and Federally Listed Endangered and Threatened Animals of California*. August.

California Native Plant Society. 2001. *California Native Plant Society Inventory*. <http://www.northcoast.com/~cnps/cgi-bin/cnps/sensinv.cgi>.

CH2M HILL. 2003. *Groundwater Sampling and Analysis Program, 2002-2003 Annual Report*. November.

CH2M HILL. 2001. *Soil Record of Decision for the WABOU*. Draft Final. Travis Air Force Base, California. December.

CH2M HILL. 2000. *Stormwater Drainage System Improvements Plan, Volume 1*. September.

Federal Interagency Committee on Urban Noise. 1980. *Guidelines for Considering Noise in Land Use Planning and Control*.

LSA Associates, Inc. 2004. *Solano Multi-species Habitat Conservation Plan/Natural Community Conservation Plan*. Solano County Water Agency Species Descriptions, Western Burrowing Owl. March.

Miller, L.N., E.W. Wood, R.M. Hoover, A.R. Thompson, S.L. Thompson, and S.L. Paterson. 1978. *Electric Power Plant Environmental Noise Guide, Vol. 1*. Prepared by Bolt, Beranek & Newman, Inc., for the Edison Electric Institute.

Olmsted, F.H., and G.H. Davis. 1961. *Geologic Features and Ground-Water Storage Capacity of the Sacramento Valley, California*. Geological Survey Water-Supply Paper 1497.

President's Council on Environmental Quality (CEQ). 1997.

<http://ceq.eh.doe.gov/nepa/regs/guidance.html>.

Thomasson, H.G., Jr., F.H. Olmsted, and E.F. LeRoux. 1960. *Geology, Water Resources and Usable Ground-Water Storage Capacity of Part of Solano County, California*. Geological Survey Water-Supply Paper 1464.

Travis Air Force Base (AFB or Base). 2003a. *Integrated Natural Resources Management Plan*. September.

Travis Air Force Base (AFB or Base). 2003b. *Integrated Cultural Resources Management Plan*. March.

Travis Air Force Base (AFB or Base). 2003c. *Fiscal Year 2003 Economic Impact*.

Travis Air Force Base (AFB or Base). 2002a. *Travis Air Force Base General Plan*. October.

Travis Air Force Base (AFB or Base). 2002b. *Travis Air Force Base Environmental Flight Policy for Contractors*. August.

Travis Air Force Base (AFB or Base). 1999. *Hazardous Waste Management Plan*. December.

URS. 2004. *Environmental Assessment for the Construction of the Army Recruiting Battalion Center, Travis Air Force Base, California*. January

U.S. Air Force (Air Force). 2005. Memorandum from Wayne Williams/60 CES/CECP regarding comments on Draft Environmental Assessment for Global Reach Deployment Center. January 19.

U.S. Air Force (Air Force). 1998. *USAF Management Action Plan – Travis Air Force Base – Fairfield, California*. Department of the Air Force, 60th Air Mobility Wing.

U.S. Air Force (Air Force). 1997. Air Force Instruction 32-7086, Hazardous Materials Management. August.

U.S. Air Force (Air Force). 1994a. Air Force Instruction 32-7042, Solid and Hazardous Waste Compliance. May.

U.S. Air Force (Air Force). 1994b. *Environmental Compliance Policy for Oil/Water Separators Operations, Maintenance and Construction*. October.

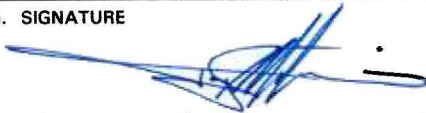
U.S. Army Corps of Engineers (USACE). 1987. *Corps of Engineers Wetlands Delineation Manual*. <http://www.spk.usace.army.mil/cespk-co/regulatory/delineation-info.html.Wetlands>. January.

U.S. Census Bureau. 2004. *Current Population Survey 2004 Annual Social and Economic Supplement*.

U.S. Census Bureau. 2000. *American Factfinder*. Solano County.  
<http://factfinder.census.gov/servlet/SAFFacts?sse=on>

**Appendix A**  
**Air Force Form 813**

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REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS		Report Control Symbol RCS: 04-42
INSTRUCTIONS: Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).		
<b>SECTION I - PROPONENT INFORMATION</b>		
1. TO (Environmental Planning Function) 60 CES/CEVP	2. FROM (Proponent organization and functional address symbol) 60 CES/CECC	2a. TELEPHONE NO. 424-0882
3. TITLE OF PROPOSED ACTION CONSTRUCT AMOG GLOBAL REACH DEPLOYMENT CENTER, XDAT: 96-3103P1		
4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date) TO ASSURE THAT ALL ENVIRONMENTAL REQUIREMENTS ARE PROPERLY IDENTIFIED AND ADDRESSED PRIOR TO CONSTRUCTION AND LAND ACQUISITION		
5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.) CONSTRUCT THE AMOG GLOBAL REACH DEPLOYMENT CENTER, (SEE DD FORM 1391 FOR PROJECT INFO)		
6. PROPONENT APPROVAL (Name and Grade)	6a. SIGNATURE	6b. DATE 27 Feb 04
<b>SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY.</b> (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)		+   0   -   U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)		
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)		
9. WATER RESOURCES (Quality, quantity, source, etc.)		
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)		
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)		
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, flora, fauna, etc.)		
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)		
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)		
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)		
16. OTHER (Potential impacts not addressed above.) TA		U
<b>SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION</b>		
17. <input type="checkbox"/> PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____ ; OR <input checked="" type="checkbox"/> PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.		
18. REMARKS AN ENVIRONMENTAL ASSESSMENT IS NEEDED TO DETERMINE ENVIRONMENTAL IMPACTS OF CONSTRUCTION TO THE ENVIRONMENT. — Coordinate contract plans and specifications with CEVP prior to award. <div style="text-align: right; font-weight: bold; margin-top: 10px;">An Environmental Assessment is required, do not award without an approved FONSI or ROD.</div>		
19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Title) <b>TROY MARTINSON, P.E. Chief, Environmental Flight</b>	19a. SIGNATURE 	19b. DATE 3/2/04

**Appendix B**  
**Air Force Form 1391**

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1. COMPONENT AIR FORCE		FY 2006 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE	
3. INSTALLATION AND LOCATION TRAVIS AIR FORCE BASE, CALIFORNIA			4. PROJECT TITLE AMOG GLOBAL REACH DEPLOYMENT CENTER		
5. PROGRAM ELEMENT 41896	6. CATEGORY CODE 218-712	7. PROJECT NUMBER XDAT963103P1	8. PROJECT COST (\$000) 17,500		
9. COST ESTIMATES					
ITEM	U/M	QUANTITY	UNIT	COST	
PRIMARY FACILITY				11,542	
OFFICE SPACE/WAREHOUSE	SM	9,015	869	( 7,838 )	
VEHICLE MAINTENANCE FACILITY	SM	297	1,337	( 397 )	
ACFT SPRT EQUIP SHOP/STORAGE	SM	167	1,776	( 297 )	
AT/FP PHYSICAL SECURITY MEASURES	LS			( 200 )	
WRM (SWIFT BEAR) STORAGE	SM	2,323	869	( 2,020 )	
COVERED STORAGE	SM	1,821	434	( 791 )	
SUPPORTING FACILITIES				4,125	
ELECTRICAL UTILITIES	LS			( 691 )	
MECHANICAL	LS			( 578 )	
SITE IMPROVEMENTS	LS			( 1,151 )	
PAVEMENTS (ROADS, PARKING, SIDEWALKS)	SM	48,461	33	( 1,577 )	
COMMUNICATIONS	LS			( 128 )	
SUBTOTAL				15,667	
CONTINGENCY ( 5.0 %)				783	
TOTAL CONTRACT COST				16,451	
SUPERVISION, INSPECTION AND OVERHEAD ( 6.0 %)				987	
TOTAL REQUEST				17,438	
TOTAL REQUEST (ROUNDED)				17,500	
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				( 744.0 )	
10. Description of Proposed Construction: A high bay warehouse with mezzanines, low bay maint shop, washrack/vehicle maint facility, WRM storage facility, and adjacent covered storage. Concrete foundations, reinforced slab on grade, metal roof, exterior insulation system, color integral split face CMU. Includes HVAC, utilities, pavements, fire protection, comm, and site improvements. Includes AT/FP physical security IAW DOD minimum construction standards. Air Conditioning: 150 Tons					
11. REQUIREMENT: 13,623 SM      ADEQUATE: 0 SM      SUBSTANDARD: 8,432 SM PROJECT: Construct AMOG Global Reach Deployment Center. (Current Mission) REQUIREMENT: The mission of the 615th AMOG is to maintain a ready core of Air Mobility Command (AMC) mobility support forces required to execute the full spectrum of Global Reach Laydown (GRL) operations as directed by the Tanker Airlift Control Center (TACC). Due to the size and complexity of the AMOG mobility mission, consolidated, adequate facility space is required to store, protect and maintain mobility equipment, and to allow efficient loading of pre-assembled mobility support equipment packages on mobility operations aircraft. These include mobile and satellite communications equipment and trailers, material handling equipment, and war readiness material. The high bay warehouse designed for palletized equipment will allow maximum storage capacity. Space					

1. COMPONENT AIR FORCE	FY 2006 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION TRAVIS AIR FORCE BASE, CALIFORNIA		4. PROJECT TITLE AMOG GLOBAL REACH DEPLOYMENT CENTER	
5. PROGRAM ELEMENT 41896	6. CATEGORY CODE 218-712	7. PROJECT NUMBER XDAT963103P1	8. PROJECT COST (\$000) 17,500

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

- |  |           |
|--|-----------|
| (a) Date Design Started                                    | 01-DEC-05 |
| (b) Parametric Cost Estimates used to develop costs        | YES       |
| * (c) Percent Complete as of 01 JAN 2005                   |           |
| * (d) Date 35% Designed                                    | 01-FEB-06 |
| (e) Date Design Complete                                   | 01-JUN-06 |
| (f) Energy Study/Life-Cycle analysis was/will be performed | NO        |

(2) Basis:

- |   |    |
|---|----|
| (a) Standard or Definitive Design -       | NO |
| (b) Where Design Was Most Recently Used - |    |

(3) Total Cost (c) = (a) + (b) or (d) + (e): (\$000)

- |  |  |
|--|--|
| (a) Production of Plans and Specifications |  |
| (b) All Other Design Costs                 |  |
| (c) Total                                  |  |
| (d) Contract                               |  |
| (e) In-house                               |  |

(4) Construction Contract Award 06 OCT

(5) Construction Start 06 NOV

(6) Construction Completion 07 NOV

\* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project provided from other appropriations:

EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST (\$000)
COMMERCIAL WELDER, PWH-100	3080	2006	69
PALLET TRUCK, MODEL PDR 30-154	3080	2006	80
WAREHOUSE SHELVING	3080	2006	200
SECURITY SYSTEM	3080	2006	75
MACHINE SHOP EQUIPMENT	3080	2006	100
PALLET HANDLING EQUIPMENT	3080	2006	120
SYSTEMS FURNITURE	3080	2006	100

1. COMPONENT <b>AIR FORCE</b>	FY 2000 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION <b>TRAVIS AIR FORCE BASE, CALIFORNIA</b>		
4. PROJECT TITLE <b>GLOBAL REACH DEPLOYMENT CENTER (AMOG)</b>		5. PROJECT NUMBER <b>XDAT-96-3102</b>

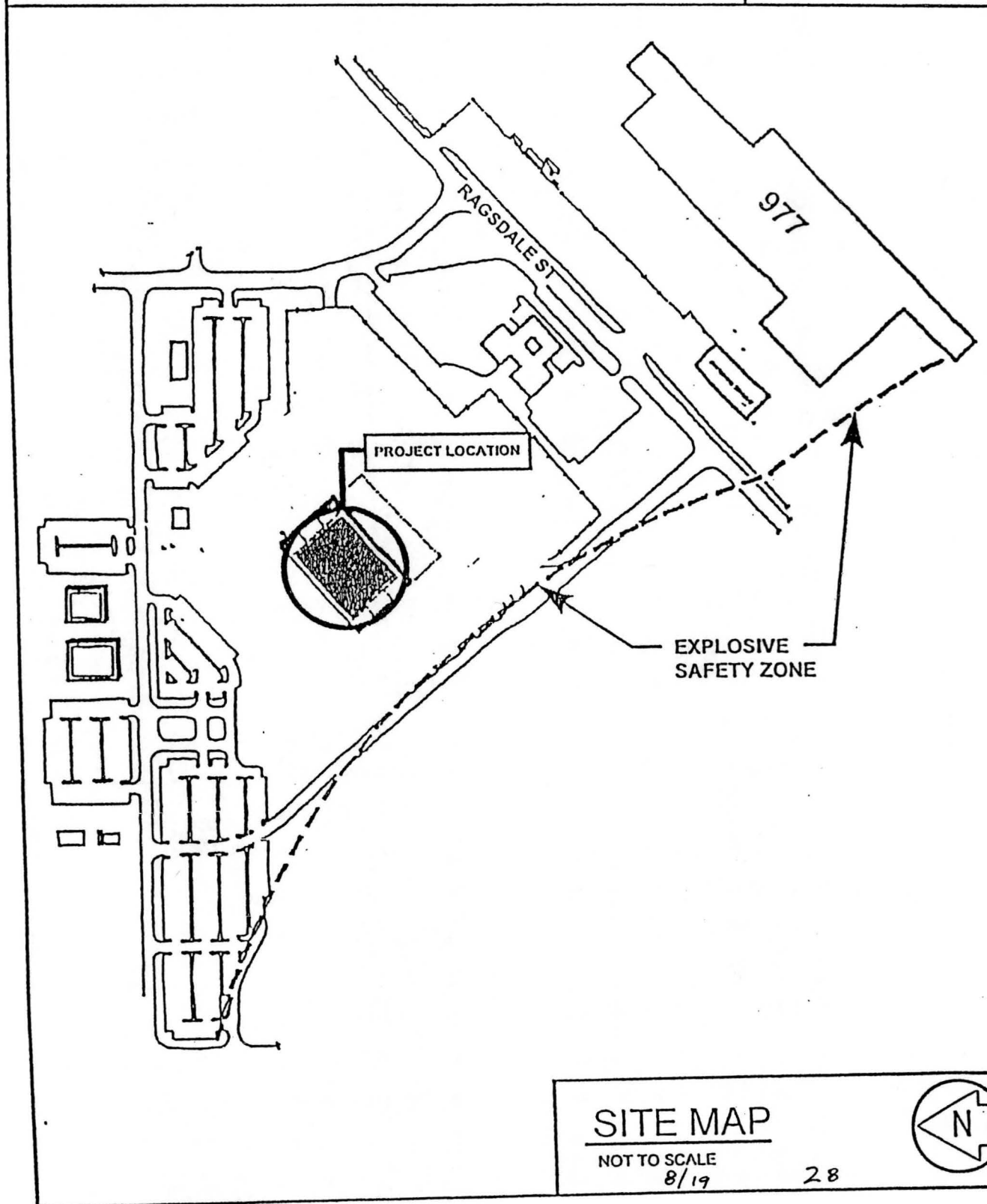
  

**LOCATION MAP**  
 NOT TO SCALE

1. COMPONENT AIR FORCE	FY 2000 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
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3. INSTALLATION AND LOCATION TRAVIS AIR FORCE BASE, CALIFORNIA
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4. PROJECT TITLE GLOBAL REACH DEPLOYMENT CENTER (AMOG)	5. PROJECT NUMBER XDAT-96-3102
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**SITE MAP**

NOT TO SCALE  
8/19

28



1. COMPONENT AIR FORCE	FY 2006 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION TRAVIS AIR FORCE BASE, CALIFORNIA		4. PROJECT TITLE AMOG GLOBAL REACH DEPLOYMENT CENTER	
5. PROGRAM ELEMENT 41896	6. CATEGORY CODE 218-712	7. PROJECT NUMBER XDAT963103P1	8. PROJECT COST (\$000) 17,500

is also required for the storage of 5 Swift BEAR packages, one of which must be maintained in a ready-to-deploy configuration. A wash rack is also required to clean high-value equipment. Force protection measures will be incorporated IAW USAF Installation Force Protection Guide.

**CURRENT SITUATION:** The four squadrons comprising the 615 AMOG are located across 13 widely dispersed sites at Travis AFB. The seismic vulnerability of the existing substandard warehouse presents a potential risk for mission failure. Adequate mobility storage is non-existent, requiring deployable assets to be stored in unsuitable buildings or in unprotected exterior yards. The existing buildings are not designed to handle current mobility equipment storage and rapid access requirements, and there is no storage location for the Swift BEAR assets. This deficiency causes inefficient handling/delivery of equipment to the flightline and degrades operations. There is no secure weapons storage to meet AMOG's requirements. Their weapons are currently stored in the base Armory. The base wash rack is not large enough to service the expandable shelters and Mobility Air Reporting and Communications Shelters (MARCS), requiring them to be washed manually using hoses, which is inefficient and time consuming. Equipment assets now stored outside due to lack of covered storage are exposed to the elements, prematurely degrading the usable life span.

**IMPACT IF NOT PROVIDED:** AMOG storage, maintenance and deployment operations would continue at various widely dispersed locations in aged, functionally inefficient, improperly secured facilities, and unit integrity would not be achieved. Preservation of high value assets and quick response to mobility taskings from TACC would continue to be jeopardized without an adequate Global Reach Deployment Center. Swift BEAR assets would not be able to be stored.

**ADDITIONAL:** Metric/English Conversion: 1SM=10.76SF. This project meets the criteria/scope specified in AFH 32-1084, "Civil Engineering Facility Requirements." A preliminary analysis of reasonable options for accomplishing this project (status quo, addition/alteration, and new construction) was accomplished. It indicates new construction is the only option that will meet operational requirements. Because of this, a full economic analysis was not performed; a certificate of exception has been prepared. Fire protection criteria shall conform to the requirements of Military Handbook 1008C, National Fire Protection Association Standards and the governing building codes.

Base Civil Engineer: Lt Col Patrick J. Smith 707-424-2492

**JOINT USE CERTIFICATION:** This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.

## **Appendix C**

### **Air Emission Calculations**

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# Air Emission Calculations

## C.1 Construction and Operation Emissions Summary

Table C-1 provides a summary of the construction and operation emissions associated with the Proposed Action. Construction emissions were calculated for each phase, then converted to annual emission rates. The operation emissions included the emissions from the heating system, the new parts cleaners, and the mobile sources. Detailed emission calculation methodologies are described in the following sections.

TABLE C-1

Summary of Emissions from Proposed Global Reach Deployment Center and Ancillary Facilities

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Air Emission Calculations*

Emission Type	Annual Emissions (tpy)			
	VOC	NO <sub>x</sub>	CO	PM <sub>10</sub>
<b>Construction</b>				
2006 to 2007 (Phase I)	1.4	21.1	4.6	1.5
2008 (Phase I and Phase II)	0.7	10.2	2.2	0.7
2009 to 2010 (Phase II)	0.3	4.9	1.1	0.3
2011 (Phase III)	0.3	4.2	0.9	0.3
2012 (Phase III)	0.1	2.1	0.5	0.2
<b>Operation</b>				
2006 to 2007 (Phase I)	0.06	0.9	0.7	0.07
2008 (Phase I and Phase II)	0.07	1.2	1.0	0.09
2008 to 2010 (Phase II)	0.07	1.2	1.0	0.09
2011 (Phase III)	0.08	1.3	1.1	0.1
2012 (Phase III)	0.4	1.6	4.1	0.1
2013 and after	0.8	1.8	7.0	0.1
<b>Total Emissions</b>				
2006 to 2007 (Phase I)	1.5	21.9	5.3	1.6
2008 (Phase I and Phase II)	0.8	11.3	3.2	0.8
2008 to 2010 (Phase II)	0.4	6.1	2.0	0.4
2011 (Phase III)	0.4	5.5	2.0	0.4
2012 (Phase III)	0.6	3.7	4.5	0.3
2013 and after	0.8	1.8	7.0	0.1

**Notes:**

tpy = tons per year

VOC = volatile organic compound

NO<sub>x</sub> = nitrogen oxide

CO = carbon monoxide

PM<sub>10</sub> = particulate matter less than 10 microns

## C.2 Estimation of Construction Emissions

Table C-2 shows the construction schedule of the proposed Global Reach Deployment Center and ancillary facilities. The emission factors and the total emissions from construction of the Proposed Action are shown in Table C-3. The construction emission factors of VOCs, NO<sub>x</sub>, CO, and PM<sub>10</sub> were obtained from Table 9-1 of the CEQA Air Quality Handbook (South Coast Air Quality Management District, 1993). These emission factors were established based on regional averages, including onsite construction equipment and workers' travel. The emission factors for industrial facilities were used in the calculations.

Total emissions in each construction phase were calculated by multiplying the emission factors by the total square footage of the proposed construction. The annual construction emissions were calculated by dividing the total emissions of each phase by the number of months in each phase, then multiplying by the number of months in a year when the phase is conducted.

TABLE C-2

Construction Schedule

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Air Emission Calculations*

Construction Phase	Square Footage of Building Construction	Construction Period	Months of Construction
I	196,585	Jan. 2006 – Mar. 2008	27
II	61,332	Jan. 2008 – Dec. 2010	36
III	26,362	Jan. 2011 – Jun. 2012	18

TABLE C-3

Estimated Emissions during Construction of the Proposed Action

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Air Emission Calculations*

	Unit	VOC	NO <sub>x</sub>	CO	PM <sub>10</sub>
Emissions factor	(lb/construction period/ 1,000 ft <sup>2</sup> )	32.79	481.88	104.79	34.22
Construction Phase I	lb/construction period	6,446	94,730	20,600	6,727
Construction Phase II	lb/construction period	2,011	29,555	6,427	2,099
Construction Phase III	lb/construction period	864	12,703	2,762	902
<b>Construction 2006-2007(Phase I)</b>	tpy	1.4	21.1	4.6	1.5
<b>Construction 2008 (Phase I and Phase II)</b>	tpy	0.7	10.2	2.2	0.7
<b>Construction 2009 to 2010 (Phase II)</b>	tpy	0.3	4.9	1.1	0.3
<b>Construction 2011 (Phase III)</b>	tpy	0.3	4.2	0.9	0.3
<b>Construction 2012 (Phase III)</b>	tpy	0.1	2.1	0.5	0.2

## C.3 Estimation of Operation Emissions

### C.3.1 Emissions from Operation of the New Parts Cleaners

Table C-4 shows the estimated VOC emissions from operation of the two new parts cleaners. It was assumed that the annual average VOC emissions from the new parts cleaners would be the same as for the existing ones. The annual average VOC emissions of the new parts cleaner were calculated by dividing the total VOC emissions of the existing cleaners by the total number of the existing cleaners, then multiplying by two. The new parts cleaners were assumed to be in operation starting in 2006.

TABLE C-4

Parts Cleaner Emissions Calculations

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Air Emission Calculations*

	Unit	VOC	NO <sub>x</sub>	CO	PM <sub>10</sub>
Existing Cleaner Emissions	lb/yr	106	NA	NA	NA
Number of Existing Cleaners	-	10	NA	NA	NA
Average Emissions per Cleaner	lb/cleaner/yr	10.6	NA	NA	NA
Number of New Cleaners	-	2	NA	NA	NA
Total Emissions from New Cleaners (after 2006)	lb/yr	21	NA	NA	NA
	<b>tpy</b>	<b>0.01</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

Notes:

Existing parts cleaner emissions data were provided by Travis Air Force Base (AFB).

NA = not applicable.

### C.3.2 Emissions from the New Heating Systems Operation

Table C-5 shows the emission factors and the total emissions of NO<sub>x</sub>, VOC, CO, and PM<sub>10</sub> from operation of the new natural gas heating systems. The emission factors of NO<sub>x</sub> and CO were obtained from Tables 1.4-1 of Chapter 1 in *Supplement D of Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources*, (U.S. Environmental Protection Agency, 1998). The emission factors of uncontrolled emissions from small boilers of less than 100 million British thermal units per hour (MMBtu/hr) were used in the calculation. The emission factors of VOCs and PM<sub>10</sub> were obtained from Table 1.4-2 of Supplement D, assuming all the particulate matter emissions would be PM<sub>10</sub>. These emission factors were measured in pounds per million standard cubic feet (lb/MMSCF) in Supplement D, but were converted to pounds per MMBtu (lb/MMBtu) in the calculation using the heating value of natural gas (1050 MMBtu/MMSCF).

The annual emissions from the new heating systems in each phase were calculated by multiplying the emission factors (lb/MMBtu) by the total operating hours per year and the heating rate of the system (MMBtu/hr).

TABLE C-5

## Heating Systems Emissions Calculations

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Air Emission Calculations*

	Unit	VOC	NO <sub>x</sub>	CO	PM <sub>10</sub>
Emission Factors	lb/MMSCF	5.5	100	84	7.6
	lb/MMBtu	0.005	0.1	0.08	0.01
Operational Emission 2006-2007					
(Phase I)	tpy	0.05	0.9	0.7	0.07
Operation Emission 2008-2010					
(Phase II)	tpy	0.06	1.2	1.0	0.09
Operation Emission 2011-2012					
(Phases III)	tpy	0.07	1.3	1.1	0.1

## Notes:

Emission factors for the boiler obtained from Chapter 1, Tables 1.4-1 and 1.4-2, *Supplement D of Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources* (U.S. Environmental Protection Agency, 1998)

New heating system in Phase I: (MMBtu/hr): 2.1

New heating system in Phase II: (MMBtu/hr): 0.68

New heating system in Phase III: (MMBtu/hr): 0.29

Heating value of natural gas (MMBtu/MMSCF): 1,050

Operating hours per year: 8,760

### C.3.3 Emissions from Mobile Sources

The mobile emissions associated with the additional vehicles traveling to Travis AFB were calculated based on emission factors derived from the On-road Mobile Source Emissions Inventory of Solano County for the year 2010 (California Air Resources Board, 2004). The emissions inventory was modeled using the State of California's on-road emissions model, EMFAC2002 V2.2. The model output provided estimates of the motor vehicle population, activity, and annual average emissions by vehicle type in Solano County.

The following information was used in the emission calculations:

- Emission factors – Emission factors of each vehicle type were calculated by dividing the estimated total annual emissions by the total vehicle miles traveled by each vehicle type in the emissions inventory. The emission factor calculations are shown in Table 4-6 of the *Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities*.
- Vehicle types – It was assumed that Travis AFB personnel would drive passenger cars (LDA), light-duty trucks (LDT), medium-duty trucks (MDV), and motorcycles (MCY) to their work places. Each vehicle type was further classified into catalyst (CAT), non-catalyst (NCAT), and diesel (DSL) in the calculation, to be consistent with the emissions inventory.

- Number of vehicles – The number of vehicles of each vehicle type driven by Travis AFB personnel was estimated using the vehicle type distributions calculated from the emissions inventory.
- Vehicle miles traveled (VMT) by the additional 150 personnel – Based on current Travis AFB data, the average percentage of personnel that live offbase would be approximately 60 percent. The additional personnel that would travel to Travis AFB were, therefore, calculated by multiplying the number of total additional personnel by 60 percent. It was assumed that the average travel distance to Travis AFB is 20 miles one way, and that the personnel would travel to and from the Base one time per day, 5 days per week, and 52 weeks per year.

The total mobile source emissions were the sum of the emissions of each vehicle type, which were calculated by multiplying the emission factors (lb/VMT) by the total annual VMT of the additional personnel. Mobile source emissions would occur after June 2012. The annual emission calculations are shown in Table 4-7 of the *Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities*.

## C.4 Works Cited

California Air Resources Board. 2004. Mobile Source Emissions Inventory.  
[http://www.arb.ca.gov/msei/on-road/emfac2002\\_output\\_table.htm](http://www.arb.ca.gov/msei/on-road/emfac2002_output_table.htm). April.

South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. April.

U.S. Environmental Protection Agency (EPA). 1998. *Supplement D to Compilation of Air Pollution Emission Factors, Volume 1: Stationary Point and Area Sources*. August.

TABLE C-6

## Mobile Sources Emissions Factor Calculations

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Air Emission Calculations*

	LDA-NCAT	LDA-CAT	LDA-DSL	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT2-NCAT	LDT2-CAT	LDT2-DSL	MDV-NCAT	MDV-CAT	MDV-DSL	MCY-NCAT	MCY-CAT	MCY-DSL
<b>Solano County Mobile Source Emissions Inventory, 2010</b>															
Vehicles	1,388	144,079	301	595	38,715	503	409	37,467	293	169	15,959	343	2,078	876	0
VMT (1000 miles)	11	4,773	5	10	1,265	13	7	1,215	9	3	521	10	14	8	0
VOC (ton/day)	0.25	1.97	0.00	0.12	0.79	0.00	0.08	0.80	0.00	0.04	0.41	0.00	0.10	0.04	0.00
NO <sub>x</sub> (ton/day)	0.07	1.72	0.01	0.05	0.69	0.02	0.04	1.02	0.01	0.03	0.54	0.02	0.02	0.01	0.00
CO (ton/day)	1.16	18.58	0.00	0.96	7.51	0.01	0.66	7.40	0.01	0.49	3.50	0.01	0.90	0.16	0.00
PM <sub>10</sub> (ton/day)	0.00	0.17	0.00	0.00	0.05	0.00	0.00	0.06	0.00	0.00	0.03	0.00	0.00	0.00	0.00
<b>Calculated Emission Factors</b>															
	LDA-NCAT	LDA-CAT	LDA-DSL	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT2-NCAT	LDT2-CAT	LDT2-DSL	MDV-NCAT	MDV-CAT	MDV-DSL	MCY-NCAT	MCY-CAT	MCY-DSL
VOC (lb/VMT)	4.55E-02	8.25E-04	0.00E+00	2.40E-02	1.25E-03	0.00E+00	2.29E-02	1.32E-03	0.00E+00	2.67E-02	1.57E-03	0.00E+00	1.43E-02	1.00E-02	0.00E+00
NO <sub>x</sub> (lb/VMT)	1.27E-02	7.21E-04	4.00E-03	1.00E-02	1.09E-03	3.08E-03	1.14E-02	1.68E-03	2.22E-03	2.00E-02	2.07E-03	4.00E-03	2.86E-03	2.50E-03	0.00E+00
CO (lb/VMT)	2.11E-01	7.79E-03	0.00E+00	1.92E-01	1.19E-02	1.54E-03	1.89E-01	1.22E-02	2.22E-03	3.27E-01	1.34E-02	2.00E-03	1.29E-01	4.00E-02	0.00E+00
PM <sub>10</sub> (lb/VMT)	0.00E+00	7.12E-05	0.00E+00	0.00E+00	7.91E-05	0.00E+00	0.00E+00	9.88E-05	0.00E+00	0.00E+00	1.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE C-7

## Mobile Sources Emissions Calculations

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Air Emission Calculations*

	LDA- NCAT	LDA- CAT	LDA- DSL	LDT1- NCAT	LDT1- CAT	LDT1- DSL	LDT2- NCAT	LDT2- CAT	LDT2- DSL	MDV- NCAT	MDV- CAT	MDV- DSL	MCY- NCAT	MCY- CAT	MCY- DSL	Total
Vehicles	1,388	144,079	301	595	38,715	503	409	37,467	293	169	15,959	343	2,078	876	0	243,175
Number of Vehicles to Travis AFB	1	53	0	0	14	0	0	14	0	0	6	0	1	0	0	90
VMT (miles per day)	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	600
<b>Total Emissions (tpy)</b>																
VOC	0.121	0.229	0.000	0.027	0.093	0.000	0.018	0.095	0.000	0.009	0.048	0.000	0.057	0.017	0.000	<b>0.7</b>
NO <sub>x</sub>	0.034	0.200	0.002	0.011	0.081	0.003	0.009	0.121	0.001	0.007	0.064	0.003	0.011	0.004	0.000	<b>0.6</b>
CO	0.563	2.159	0.000	0.220	0.885	0.001	0.148	0.878	0.001	0.106	0.413	0.001	0.514	0.067	0.000	<b>6.0</b>
PM <sub>10</sub>	0.000	0.020	0.000	0.000	0.006	0.000	0.000	0.007	0.000	0.000	0.004	0.000	0.000	0.000	0.000	<b>0.04</b>

## Notes:

Solano County Mobile Emissions Inventory 2010 was obtained from California Air Resources Board ([http://www.arb.ca.gov/msei/on-road/emfac2002\\_output\\_table.htm](http://www.arb.ca.gov/msei/on-road/emfac2002_output_table.htm)).

## Assumptions:

Percentage of personnel living offbase: 60

Average travel distance to Travis AFB, per person: 20 miles per trip, one way

Working days: 5 days/week, 52 weeks/year

**Appendix D**  
**Clean Air Act Conformity Applicability Analysis**  
**for Travis Air Force Base Global Reach**  
**Deployment Center and Ancillary Facilities**

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# Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Global Reach Deployment Center and Ancillary Facilities

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## D.1 Purpose

The U.S. Air Force is required to perform an air conformity applicability analysis to determine whether the construction and operation of the Global Reach Deployment Center and ancillary facilities (Center) for the 615<sup>th</sup> Air Mobility Operations Group (AMOG) at Travis Air Force Base (AFB), California, will comply with the U.S. Environmental Protection Agency's (EPA) Final Conformity Rule, 40 Code of Federal Regulations (CFR) 93, Subpart B (for federal agencies), and 40 CFR 51, Subpart W (for state requirements), of the amended Clean Air Act (CAA).

## D.2 Background

EPA has issued regulations clarifying the applicability and procedures for ensuring that federal activities comply with the amended CAA. The EPA Final Conformity Rule implements Section 176(c) of the CAA, as amended in 42 U.S. Code 7506(c). This rule was published in the Federal Register on November 30, 1993, and took effect on January 31, 1994.

The EPA Final Conformity Rule requires all federal agencies to ensure that any federal action resulting in nonattainment criteria pollutant emissions conforms with an approved or promulgated state implementation plan (SIP) or federal implementation plan. Conformity means compliance with a SIP's or federal implementation plan's purpose of attaining or maintaining the National Ambient Air Quality Standards (NAAQS). Specifically, this means ensuring that the federal action will not (1) cause a new violation of the NAAQS; (2) contribute to any increase in the frequency or severity of violations of existing NAAQS; or (3) delay the timely attainment of any NAAQS interim or other attainment milestones. NAAQS are established for seven criteria pollutants, as follows:

- Ozone (O<sub>3</sub>)
- Carbon monoxide (CO)
- Particulate matter equal to or less than 10 microns in diameter (PM<sub>10</sub>)
- Particulate matter equal to or less than 2.5 microns in diameter (PM<sub>2.5</sub>)
- Nitrogen dioxide (NO<sub>2</sub>)
- Sulfur dioxide (SO<sub>2</sub>)
- Lead (Pb)

The current standards apply only to federal actions in NAAQS nonattainment or maintenance areas.

## D.3 Summary of Air Pollutant Emissions and Regulatory Standards

The proposed Center project would be implemented in Solano County, California, which is designated as nonattainment (other) for the 1-hour O<sub>3</sub> and nonattainment (marginal) for 8-hour O<sub>3</sub>. The county is in attainment for all other criteria pollutants. In addition, the urbanized areas of Solano County, which include the area occupied by Travis AFB, are maintenance areas for CO under the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (California Air Resources Board [CARB], 1998). General conformity is being addressed for the Proposed Action. Air quality management in Solano County is under the jurisdiction of CARB, the Bay Area Air Quality Management District (BAAQMD), and EPA Region 9. The applicable General Conformity regulation is 58 FR 63214 (November 30, 1993).

The EPA Final Conformity Rule requires that total direct and indirect emissions of non-attainment and maintenance criteria pollutants, including O<sub>3</sub> precursors (volatile organic compounds [VOCs] and nitrogen oxides [NO<sub>x</sub>]), be considered in determining conformity. The rule does not apply to actions where the total direct and indirect emission of non-attainment and maintenance criteria pollutants do not exceed threshold levels for criteria pollutants established in 40 CFR 93.135(b). Consequently, the applicable de minimis levels for the proposed Center project are 100 tons per year (tpy) for emissions of O<sub>3</sub> precursors (VOCs and NO<sub>x</sub>), and 100 tpy for emissions of CO. Tables D1 and D2 present the de minimis threshold levels of nonattainment and maintenance areas, respectively.

TABLE D-1

De Minimis Thresholds in Nonattainment Areas)

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Global Reach Deployment Center and Ancillary Facilities*

Pollutant	Degree of Nonattainment	De Minimis Threshold <sup>a</sup>
O <sub>3</sub> (VOCs and NO <sub>x</sub> )	Serious	50
	Severe	25
	Extreme	10
	Other ozone – outside an O <sub>3</sub> transport region	<b>100</b>
O <sub>3</sub> (VOCs)	Marginal and moderate – inside an O <sub>3</sub> transport region:	50
O <sub>3</sub> (NO <sub>x</sub> )	Marginal and moderate – inside an O <sub>3</sub> transport region:	100
CO	All	100
PM <sub>10</sub>	Moderate	100
	Serious	70
SO <sub>2</sub> or NO <sub>2</sub>	All	100
Pb	All	25

<sup>a</sup>De minimis thresholds are listed in tpy. The bold number reflects de minimis threshold used in this analysis.

Source: 40 CFR 93.135(b)

TABLE D-2

De Minimis Thresholds in Maintenance Areas

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Global Reach Deployment Center and Ancillary Facilities*

Pollutant	Maintenance Area	De Minimis Threshold <sup>a</sup>
O <sub>3</sub> (NO <sub>x</sub> )	All	100
O <sub>3</sub> (VOCs)	Inside an O <sub>3</sub> transport region	50
	Outside an O <sub>3</sub> transport region	100
CO	All	<b>100</b>
PM <sub>10</sub>	All	100
SO <sub>2</sub> or NO <sub>2</sub>	All	100
Pb	All	25

<sup>a</sup>De minimis thresholds are listed in tpy. The bold number reflects de minimis threshold used in this analysis.

Source: 40 CFR 93.135(b)

In addition to meeting de minimis requirements, a federal action must not be considered a regionally significant action. A federal action is considered regionally significant when the total emissions from the action equal or exceed 10 percent of the air quality control area's emissions budget for the applicable pollutant. If a federal action meets de minimis requirements and is not considered a regionally significant action, it is exempt from further conformity analyses, pursuant to 40 CFR 93.153(c).

## D.4 Emission Calculations

### D.4.1 Construction Emissions

Construction of the Center would be conducted in three phases, as shown in Table D-3.

TABLE D-3

Alternative 2 Construction Schedule

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Global Reach Deployment Center and Ancillary Facilities*

Phase	Square footage of Building Construction	Construction Period	Months of Construction
I	196,585	Jan. 2006 – Mar. 2008	27
II	61,332	Jan. 2008 – Dec. 2010	36
III	26,362	Jan. 2011 – Jun. 2012	18

Construction emissions are expected to occur as a result of engine exhaust from added vehicles trips of construction workers and offroad construction equipment, including earth-moving equipment and trucks. These emissions would primarily consist of NO<sub>x</sub>, SO<sub>2</sub>, particulate matter, CO, and VOCs. Because the project is only subject to general conformity requirements for NO<sub>x</sub>, VOC, and CO, the emissions of SO<sub>2</sub> and particulate matter are not discussed in this applicability analysis.

The construction emissions of VOCs, NO<sub>x</sub>, and CO were calculated according to the methodology provided in Chapter 9 of the *CEQA Air Quality Handbook* (South Coast Air Quality Management District, 1993), because BAAQMD does not have specific emission

factors for construction projects. Emission factors from Table 9-1, for “Industrial” facilities, were used. These emission factors include onsite construction equipment and worker travel.

The estimated construction emissions for each year are shown in Table D-4. Detailed construction emission calculations are provided in Appendix C.

TABLE D-4

Estimated Emissions during Construction of the Proposed Action

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Global Reach Deployment Center and Ancillary Facilities*

Construction Year	Annual Emissions (tpy)		
	VOC	NO <sub>x</sub>	CO
2006 to 2007 (Phase I)	1.4	21.1	4.6
2008 (Phase I and Phase II)	0.7	10.2	2.2
2009 to 20010 (Phase II)	0.3	4.9	1.1
2011 (Phase III)	0.3	4.2	0.9
2012 (Phase III)	0.1	2.1	0.5

## D.4.2 Operation Emissions

Operation emissions from the Proposed Action would come from the two new parts cleaners, the heating systems, and the vehicles emissions from the additional personnel that would travel to Travis AFB after the Center has been constructed.

### D.4.2.1 Emissions from New Parts Cleaners

The cleaning solvent to be used during operation of parts cleaners at the Center would cause VOC emissions. Travis AFB currently operates 10 parts cleaners, with average VOC emissions of approximately 10 pounds per year, per parts cleaner. It is assumed that the average annual VOC emissions from the two new parts cleaners would be the same as for the existing ones. Consequently, the total VOC emissions from the two new parts cleaners are estimated to be approximately 20 pounds per year. It is assumed that the two parts cleaners will be in operation after construction Phase I, in 2006. Detailed emission calculations for the parts cleaners are provided in Appendix C.

### D.4.2.2 Emissions from New Heating Systems

Heating systems would be installed during each construction phase. The rated heat input for each phase is as follows:

- Phase I: 2.1 million British thermal units per hour (MMBtu/hr)
- Phase II: additional 0.68 MMBtu/hr to Phase I
- Phase III: additional 0.29 MMBtu/hr to Phase II

All heating systems would use natural gas for fuel. Operation of the heating systems would be intermittent. Most of the operating hours would be during the 4-month heating season of November 15 through March 15, for approximately 8 hours per day. Operation at other times would be rare.

To estimate an upper bound, emissions were calculated using the assumption that the heating systems would operate 24 hours per day, 365 days per year. This approach resulted

in much higher emissions than those that would be expected from the actual operating hours.

The heating system emission factors for VOCs, NO<sub>x</sub>, and CO were obtained from Tables 1.41 and 1.42 of *Supplement D to Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources* (EPA, 1998). The estimated emissions from the heating systems are listed in Table D-5. Actual emissions would be much less than these amounts because the operating hours used in the calculations were much higher than the anticipated operating hours. Detailed calculations of the heating system emissions are provided in Appendix C.

TABLE D-5

Estimated Heating System Emissions during Operation of the Proposed Action  
*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Global Reach Deployment Center and Ancillary Facilities*

Operation Year	Annual Emissions (tpy)		
	VOC	NO <sub>x</sub>	CO
2006 to 2007 (Phase I)	0.05	0.9	0.7
2008 to 20010 (Phase II)	0.06	1.2	1.0
2011 to 2012 (Phase III)	0.07	1.3	1.1

#### D.4.2.3 Emissions from Mobile Sources

After construction of the Proposed Action, 150 additional personnel would work at the new Center. It is anticipated that approximately 60 percent of these additional personnel would be living offbase, and would travel to Travis AFB on working days.

It was assumed that the Travis AFB personnel would drive passenger cars, light-duty trucks, medium-duty trucks, and motorcycles to their work place. The number of vehicles of each vehicle type was estimated using the vehicle type distributions calculated from the emissions inventory.

The mobile emissions associated with the additional vehicles traveling to Travis AFB were calculated based on emission factors derived from the On-road Mobile Source Emissions Inventory of Solano County for the year 2010 (CARB, 2004), which were modeled using the State of California's on-road emissions model, EMFAC2002 Version 2.2.

The estimated emissions from mobile sources during Center operation are 0.7 tpy of VOCs, 0.6 tpy of NO<sub>x</sub>, and 6.0 tpy of CO. Detailed mobile-source emission calculations are provided in Appendix C.

#### D.4.3 Emissions Summary and Comparison to De Minimis Levels

Table D-6 summarizes the projected total air emissions during construction and operation of the proposed Center. The comparisons of total construction and operation emissions with the de minimis thresholds are shown in Table D-7. Emissions of VOC, NO<sub>x</sub>, and CO during the construction and operation of the proposed Center are below the de minimis thresholds of 100 tpy.

TABLE D-6

Estimated Emissions during Construction and Operation of the Proposed Action

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Global Reach Deployment Center and Ancillary Facilities*

Emission Type	Annual Emissions (tpy)		
	VOC	NO <sub>x</sub>	CO
<b>Construction</b>			
2006 to 2007 (Phase I)	1.4	21.1	4.6
2008 (Phase I and Phase II)	0.7	10.2	2.2
2009 to 2010 (Phase II)	0.3	4.9	1.1
2011 (Phase III)	0.3	4.2	0.9
2012 (Phase III)	0.1	2.1	0.5
<b>Operation</b>			
2006 to 2007 (Phase I)	0.06	0.9	0.7
2008 (Phase I and Phase II)	0.07	1.2	1.0
2009 to 2010 (Phase II)	0.07	1.2	1.0
2011 (Phase III)	0.08	1.3	1.1
2012 (Phase III)	0.4	1.6	4.1
2013 and after	0.8	1.8	7.0

TABLE D-7

Estimated Total Emissions for Construction and Operation of the Proposed Action

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Global Reach Deployment Center and Ancillary Facilities*

	Annual Emissions (tpy)		
	VOC	NO <sub>x</sub>	CO
<b>Total Construction and Operation</b>			
2006 to 2007	1.5	21.9	5.3
2008	0.8	11.3	3.2
2009 to 2010	0.4	6.1	2.0
2011	0.4	5.5	2.0
2012	0.6	3.7	4.5
2013 and After	0.8	1.8	7.0
<b>De Minimis Threshold</b>	<b>100</b>	<b>100</b>	<b>100</b>

#### D.4.4 Regional Significance

When the total emissions of the nonattainment and maintenance criteria pollutants do not exceed the de minimis limit, the emissions must then be compared to the air quality emissions inventory of the air basin to determine regional significance of the federal action. If

the amount of the emissions is greater than 10 percent of the emission inventory, the federal action is considered regionally significant for that pollutant (40 CFR Part 93, Subpart 153[i]).

Table D-8 compares the net emissions from the construction and operation of the Proposed Action with the San Francisco Bay Area Air Basin (Basin) emissions inventory. NO<sub>x</sub> and VOC emissions inventory data were obtained from the *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD et al., 2001). CO emission inventory data were obtained from the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). The potential increase in VOC, NO<sub>x</sub>, and CO emissions for both construction and operation are below the 10 percent threshold. Therefore, the proposed project is not considered regionally significant.

**TABLE D-8**

Comparison of Project Emissions and Emissions Inventory

*Environmental Assessment for a Global Reach Deployment Center and Ancillary Facilities, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Global Reach Deployment Center and Ancillary Facilities*

	VOC	NO <sub>x</sub>	CO
Basin Emissions Inventory	162,425	191,625	692,040
Construction and Operation Emissions (2006 to 2007)	1.5	21.9	5.3
<b>Percent of Emissions Inventory</b>	0.0009	0.01	0.0008
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (2008) (tpy)	0.8	11.3	3.2
<b>Percent of Emissions Inventory</b>	0.0005	0.006	0.0005
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (2009 to 2010)	0.4	6.1	2.0
<b>Percent of Emissions Inventory</b>	0.0003	0.003	0.0003
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (2011)	0.4	5.5	2.0
<b>Percent of Emissions Inventory</b>	0.0002	0.003	0.0003
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (2012)	0.6	3.7	4.5
<b>Percent of Emissions Inventory</b>	0.0004	0.002	0.0007
Basin Emissions Inventory	162,425	191,625	626,340
Construction and Operation Emissions (after 2012)	0.8	1.8	7.0
<b>Percent of Emissions Inventory</b>	0.0005	0.001	0.001

**Notes:**

Basin emissions inventory data for NO<sub>x</sub> and VOCs were obtained from *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD et al., 2001). Emissions inventory data for 2006 were used for emissions comparisons for all years.

Basin emissions inventory data for CO were obtained from *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). Emissions inventory data for 2005 were used for the emissions comparison of 2006 and 2007, and data for 2010 were used for the emissions comparisons of 2008 and the years after.

### D.4.5 Conclusion

The emissions calculated for each calendar year are far below the de minimis level for each of the pollutants analyzed. In addition, the emissions of CO and ozone precursors would not exceed 10 percent of the total Bay Area Air Basin emission inventories listed in the SIP. On the basis of the conformity applicability criteria, the proposed action conforms to the most recent EPA-approved SIP; therefore, the Proposed Action is exempt from the CAA conformity requirements and does not require a detailed conformity demonstration.

## D.5 Works Cited

Bay Area Air Quality Management District (BAAQMD), Association of Bay Area Governments, and Metropolitan Transportation Commission. 2001. *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard*. October.

California Air Resources Board (CARB). 1998. *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas*. September

South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. April.

U.S. Environmental Protection Agency (EPA). 1998. *Supplement D to Compilation of Air Pollution Emission Factors, Volume 1: Stationary Point and Area Sources*. August.

## **Appendix E**

### **Proof of Publication**

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**PROOF OF PUBLICATION  
(2015.5 C.C.P.)**

**STATE OF CALIFORNIA**

**COUNTY OF SOLANO, s.s.**

I am a citizen of the United States and a resident of the county of Solano. I am over the age of 18 years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of THE VACAVILLE REPORTER, a newspaper of general circulation, printed in the city of Vacaville and published daily in the cities of Vacaville and Dixon and throughout the county of Solano. The Reporter has been adjudged a newspaper of general circulation for the cities of Vacaville and Dixon, pursuant to Decree No. 25888 on June 30, 1952, and Decree No. 1006329 on March 20, 1996. The notice of which the attached is a printed copy (set in type not smaller than non-pareil), has been published in each regular and entire issue of THE VACAVILLE REPORTER. And not in any supplement thereof, on the following dates, to wit:

**JUNE 3<sup>rd</sup> , 2005**

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Vacaville, California this 3<sup>rd</sup>

day JUNE 2005

  
(Signature)

Cynthia Reed

(This space is for the County Clerk's Filing Stamp)

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